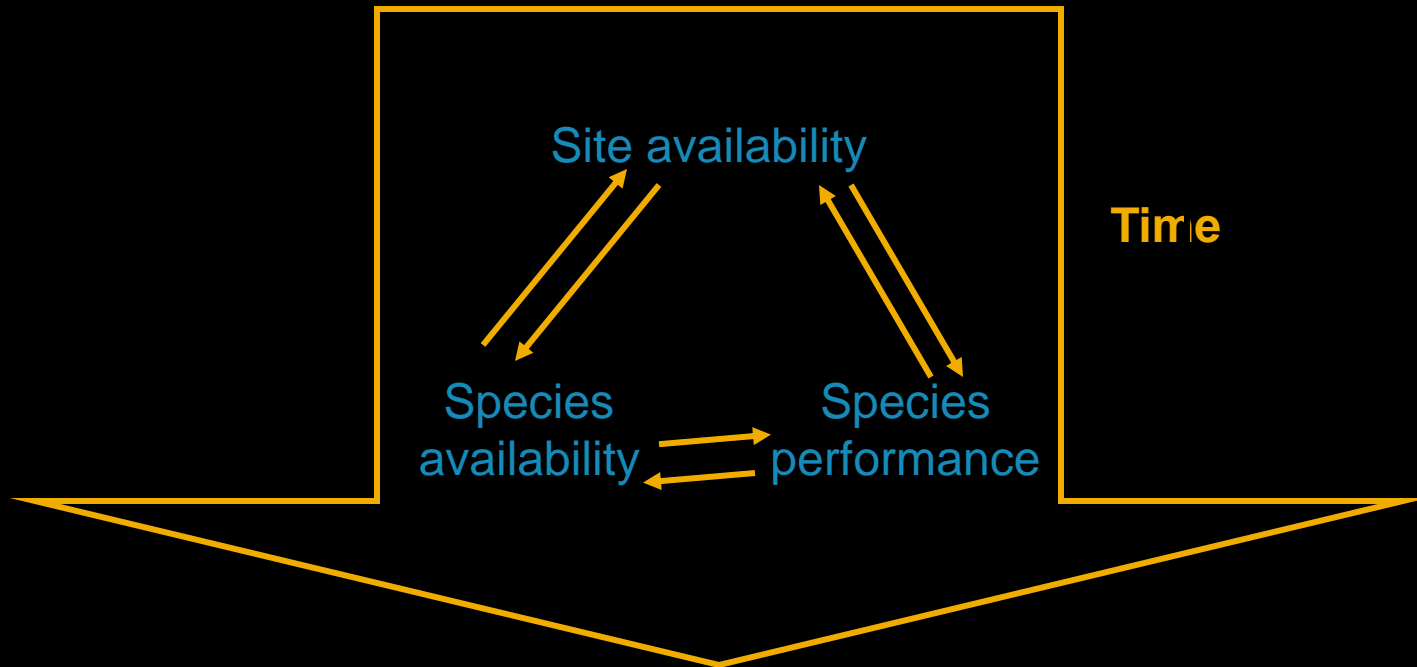


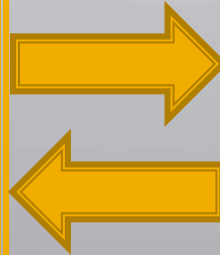
Annuals and Fire Cycles on Lands Retaining Few Perennials



Roger L. Sheley



State-&-Transition



Treating Symptoms



What is Ecologically Based Invasive Plant Management?



Plant Communities Always Change

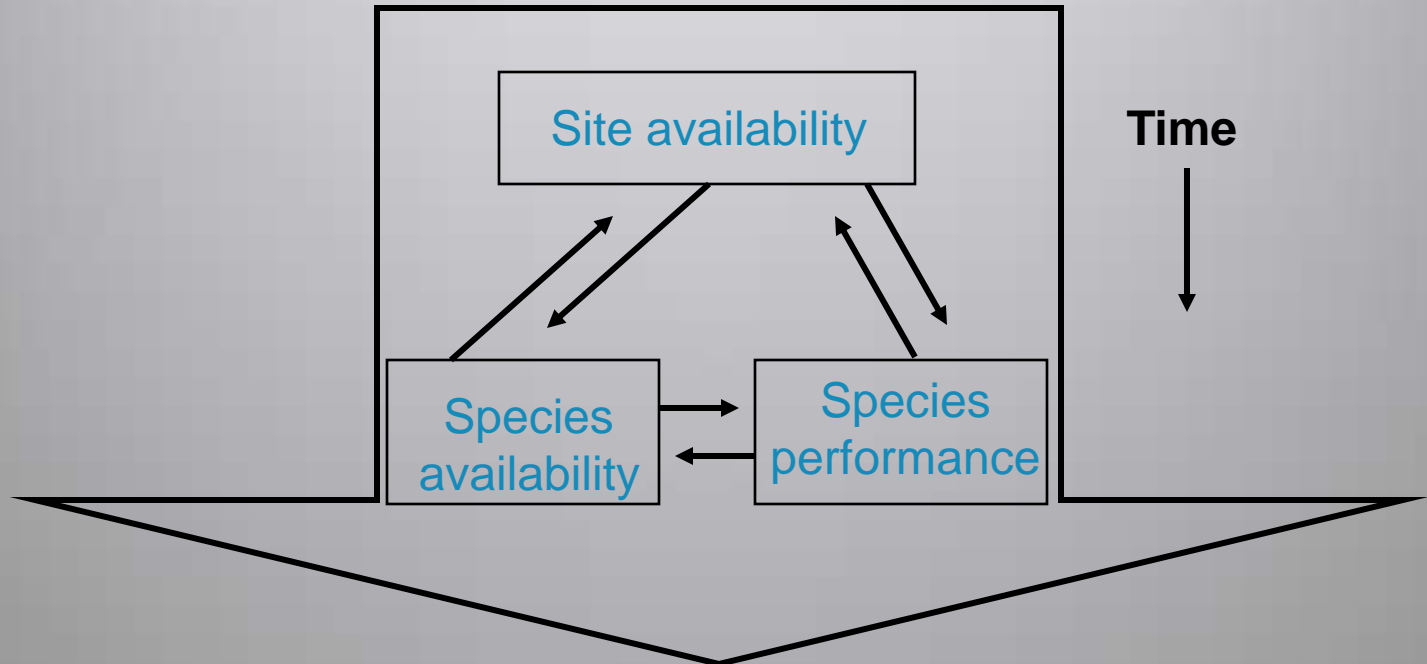


What
caused
this?



What can
we do to
cause this?





EcoLOGICALLY-based Invasive Plant Management

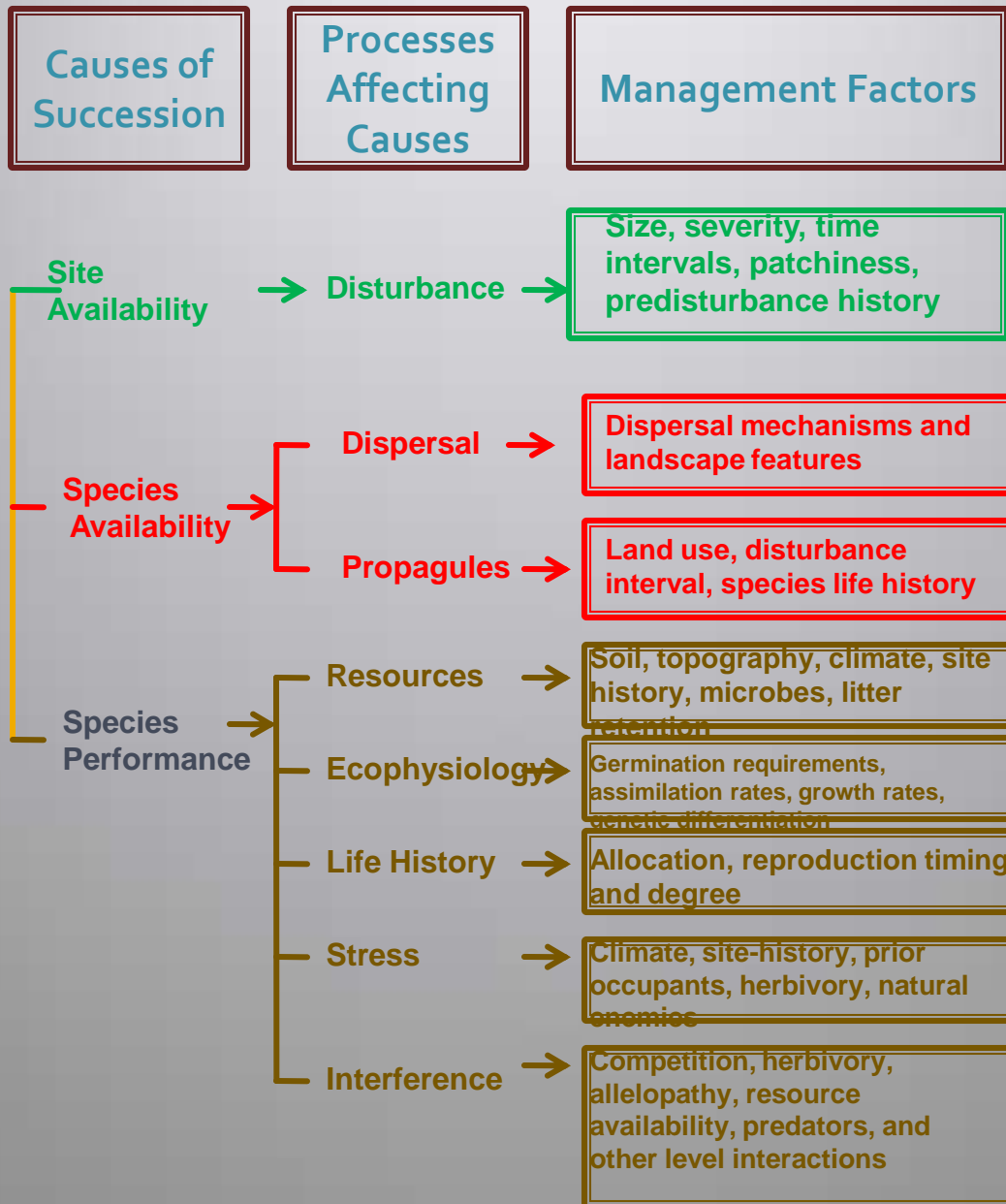


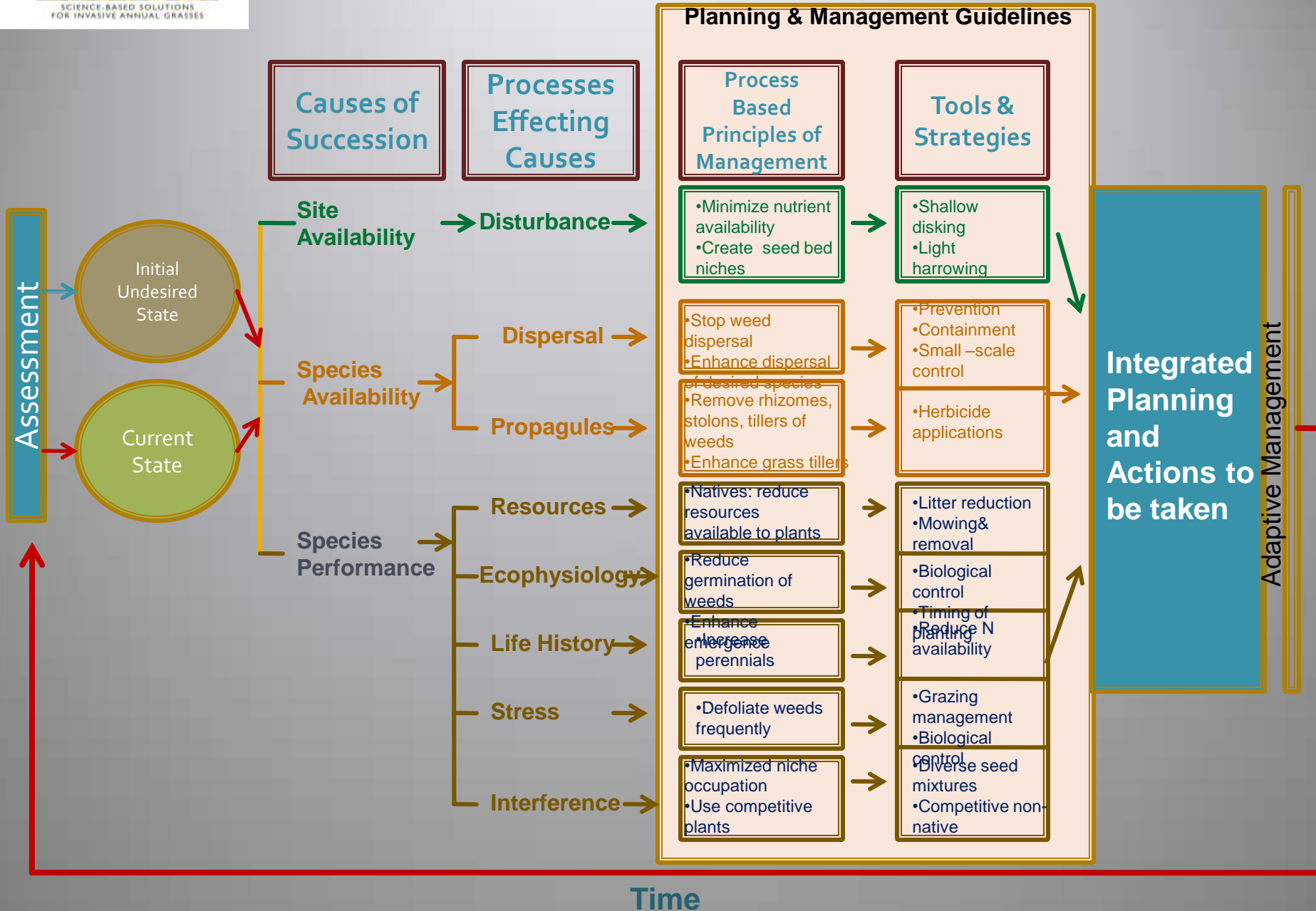
Table 5. Treatments producing the highest density of native grasses and forbs and the lowest invasive weed density at each site.

site	Native grasses (plants/m ²)	Native forbs (plants/m ²)	Invasive weeds (plants/m ²)
Disturbed	Seeding+watering 111 (22) ^a	Seeding+watering 118 (29)	2, 4-D 175 (42)
Wetland	Tillage+2, 4-D 220 (37)	Tillage+seeding 201(54)	2, 4-D 20 (11)
Remnant native	Seeding 435 (104)	Seeding 100 (32)	b _____ ^b
Control	18 (8)	43 (21)	278 (71)

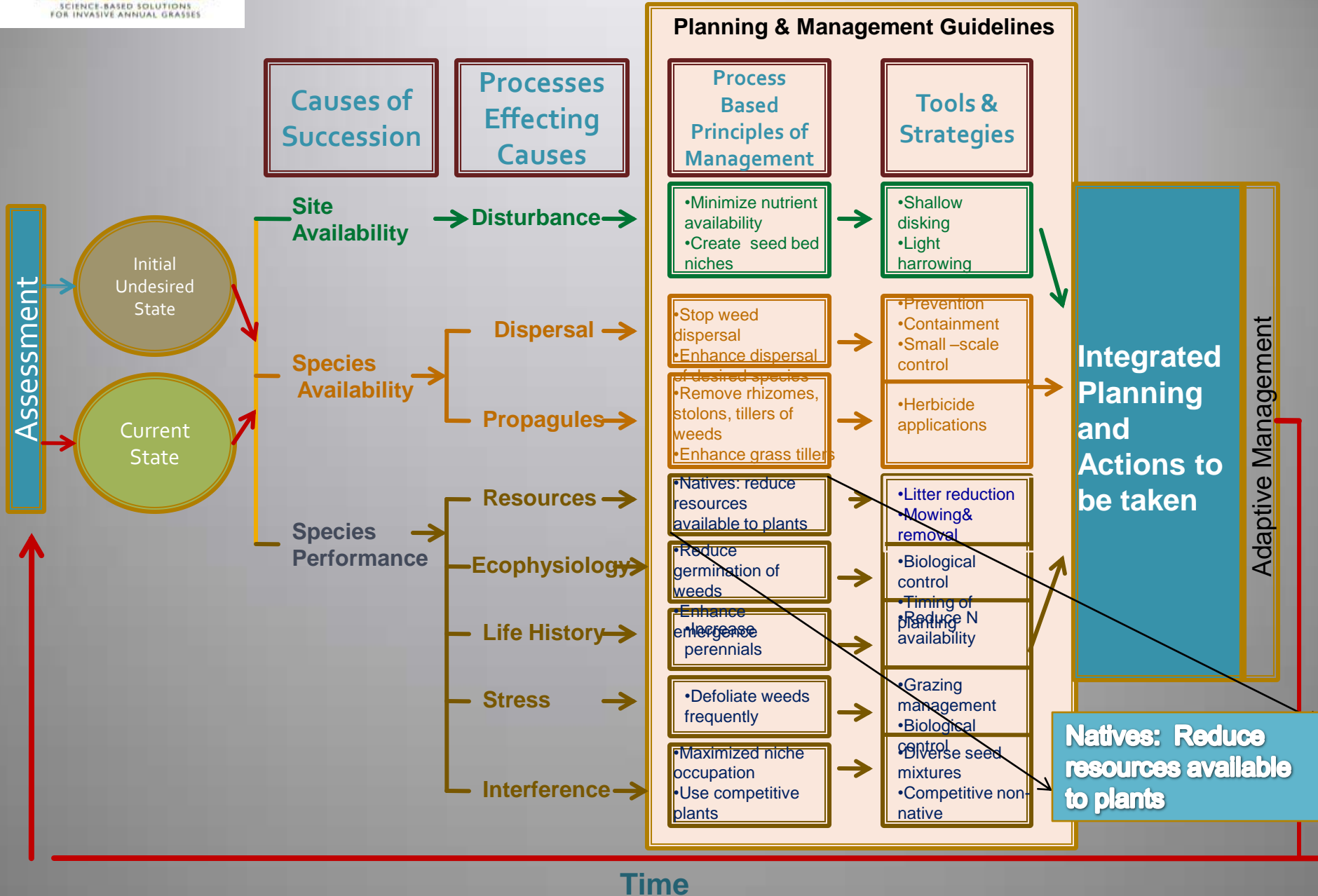
a) Numbers in parentheses are SE of the mean.

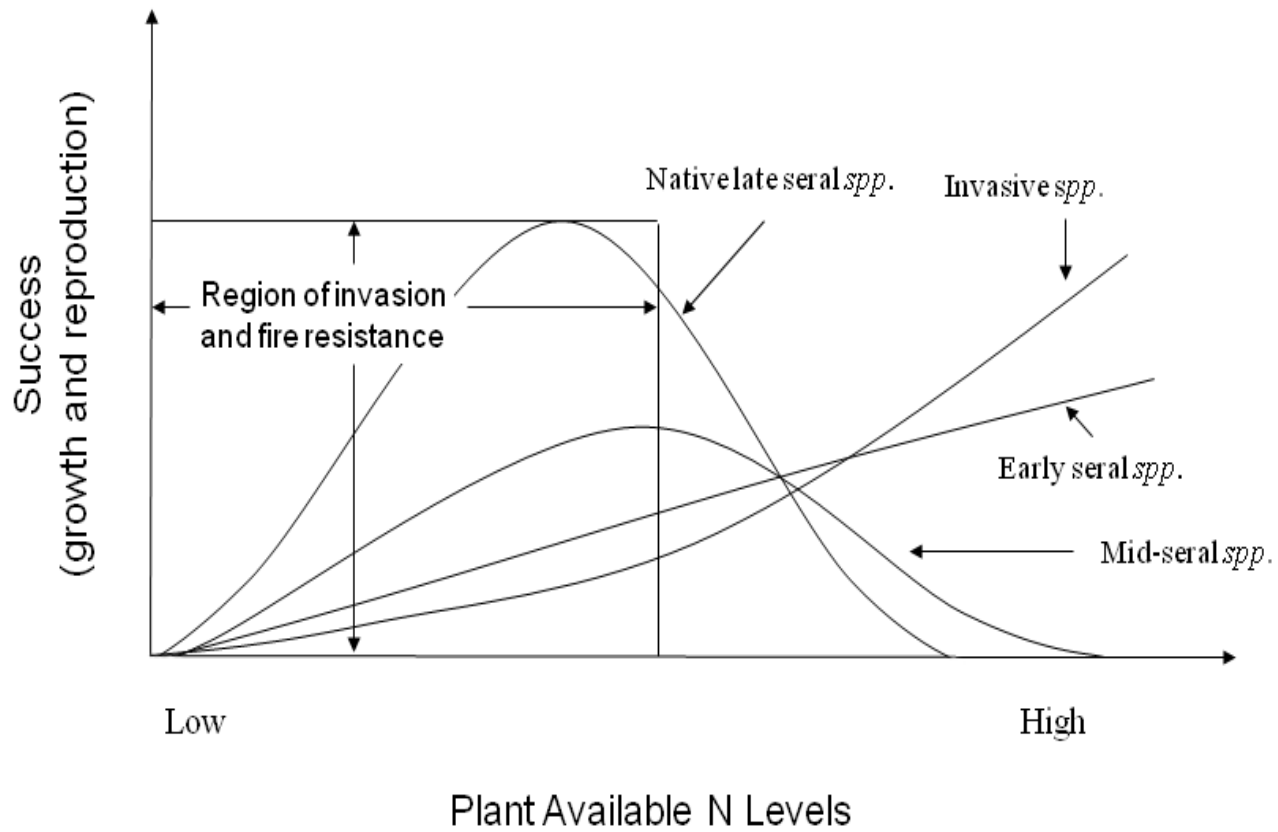
b) No treatment decreased invasive weeds on the site with remnant natives.

EcoLOGICALLY-based Invasive Plant Management



EcoLOGICALLY-based Invasive Plant Management





Ecologically-based invasive plant management is using our tools to influence the mechanisms and process that direct succession.



Initial Plant
Community

Site
Availability

Species
Availability

Controlled
Species

Final Plant
Community

Disturbance

Colonization

Performance



Herbicide

Burning

Grazing

Biological
control

Drill Seed

Island
Seeding

Grazing

Biological
control

Repeated
Spring
Grazing

Reduce soil
Fertility

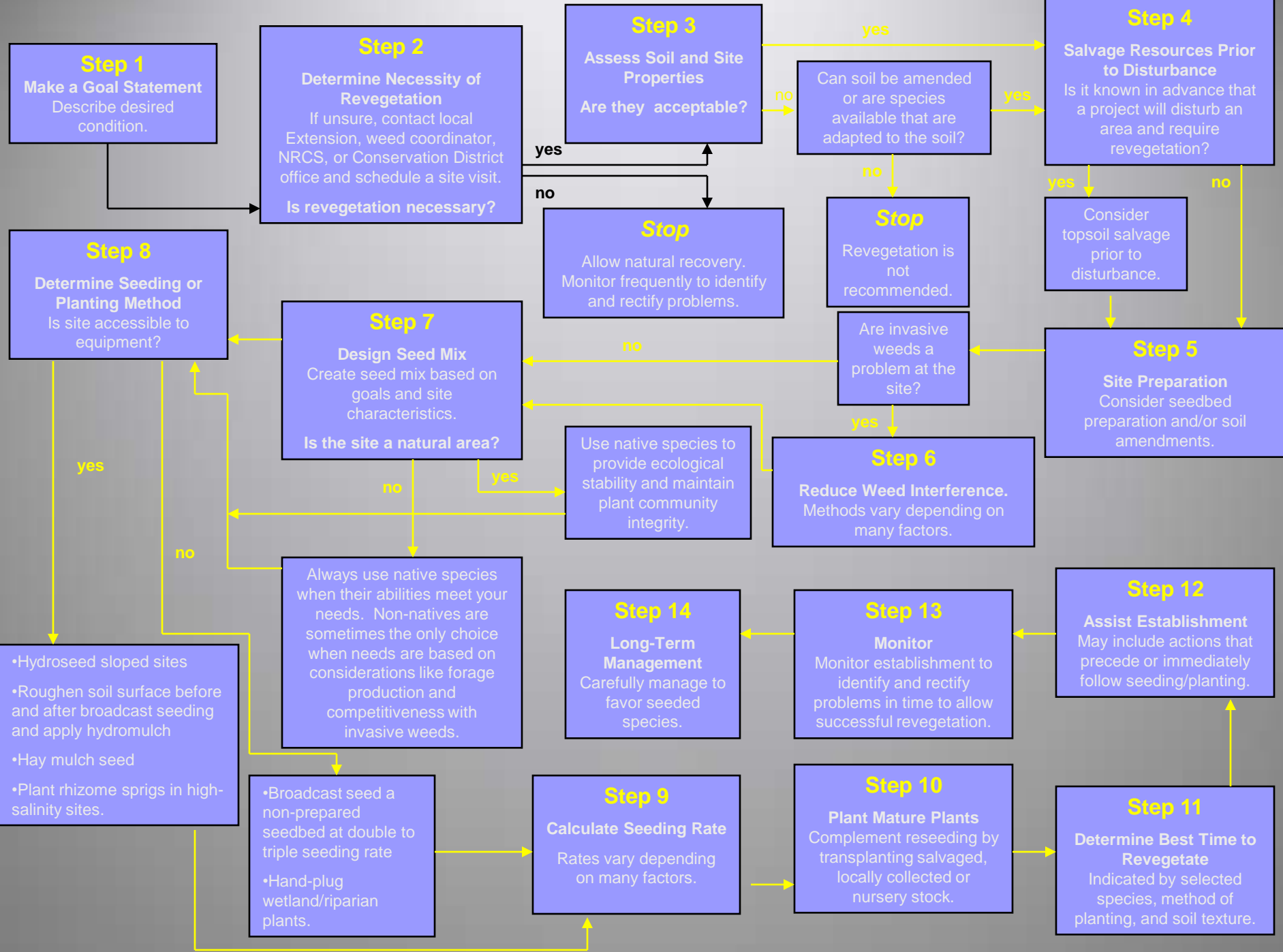
Fertilization

Mowing



Revegetation Guidelines for the Great Basin: Considering Invasive Weeds





Step 1
Make a Goal Statement
 Describe desired condition.

Step 2
Determine Necessity of Revegetation
 If unsure, contact local Extension, weed coordinator, NRCS, or Conservation District office and schedule a site visit.
Is revegetation necessary?

Step 3
Assess Soil and Site Properties
Are they acceptable?

Can soil be amended or are species available that are adapted to the soil?

Step 4
Salvage Resources Prior to Disturbance
 Is it known in advance that a project will disturb an area and require revegetation?

Stop
 Allow natural recovery. Monitor frequently to identify and rectify problems.

Stop
 Revegetation is not recommended.

Consider topsoil salvage prior to disturbance.

Step 8
Determine Seeding or Planting Method
 Is site accessible to equipment?

Step 7
Design Seed Mix
 Create seed mix based on goals and site characteristics.
Is the site a natural area?

Use native species to provide ecological stability and maintain plant community integrity.

Step 6
Reduce Weed Interference.
 Methods vary depending on many factors.

Step 5
Site Preparation
 Consider seedbed preparation and/or soil amendments.

- Hydroseed sloped sites
- Roughen soil surface before and after broadcast seeding and apply hydromulch
- Hay mulch seed
- Plant rhizome sprigs in high-salinity sites.

Always use native species when their abilities meet your needs. Non-natives are sometimes the only choice when needs are based on considerations like forage production and competitiveness with invasive weeds.

Step 14
Long-Term Management
 Carefully manage to favor seeded species.

Step 13
Monitor
 Monitor establishment to identify and rectify problems in time to allow successful revegetation.

Step 12
Assist Establishment
 May include actions that precede or immediately follow seeding/planting.

- Broadcast seed a non-prepared seedbed at double to triple seeding rate
- Hand-plug wetland/riparian plants.

Step 9
Calculate Seeding Rate
 Rates vary depending on many factors.

Step 10
Plant Mature Plants
 Complement reseeding by transplanting salvaged, locally collected or nursery stock.

Step 11
Determine Best Time to Revegetate
 Indicated by selected species, method of planting, and soil texture.

