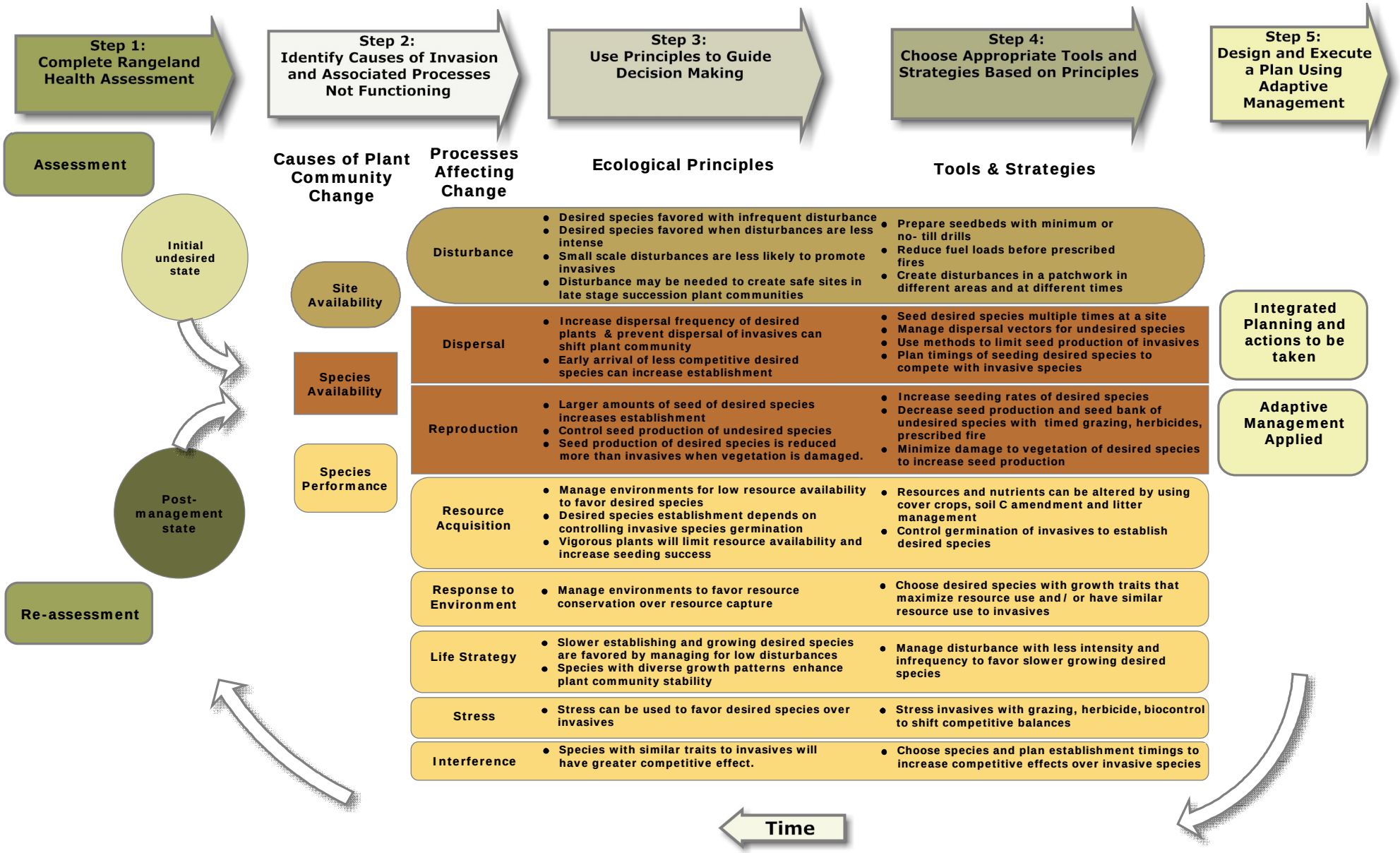
Step 1: Complete Rangeland Health Assessment
Step 2: Identify Causes of Invasion and Associated Processes Not Functioning
Step 3: Use Principles to Guide Decision Making
Step 4: Choose Appropriate Tools and Strategies Based on Principles
Step 5: Design and Execute a Plan Using Adaptive Management
Assessment
Causes of Plant Community Change
Processes Affecting Change
Ecological Principles
Tools & Strategies
Initial undesired state
Site Availability
Species Availability
Species Performance
Post-management state
Re-assessment
Disturbance
• Desired species favored with infrequent disturbance
• Desired species favored when disturbances are less intense
• Small scale disturbances are less likely to promote invasives
• Disturbance may be needed to create safe sites in late stage succession plant communities
• Prepare seedbeds with minimum or no- till drills
• Reduce fuel loads before prescribed fires
• Create disturbances in a patchwork in different areas and at different times
Dispersal
• Increase dispersal frequency of desired plants & prevent dispersal of invasives can shift plant community
• Early arrival of less competitive desired species can increase establishment
• Seed desired species multiple times at a site
• Manage dispersal vectors for undesired species
• Use methods to limit seed production of invasives
• Plan timings of seeding desired species to compete with invasive species
Reproduction
• Larger amounts of seed of desired species increases establishment
• Control seed production of undesired species
• Seed production of desired species is reduced more than invasives when vegetation is damaged.
• Increase seeding rates of desired species
• Decrease seed production and seed bank of undesired species with timed grazing, herbicides, prescribed fire
• Minimize damage to vegetation of desired species to increase seed production
Resource Acquisition
• Manage environments for low resource availability to favor desired species
• Desired species establishment depends on controlling invasive species germination
• Vigorous plants will limit resource availability and increase seeding success
• Resources and nutrients can be altered by using cover crops, soil C amendment and litter management
• Control germination of invasives to establish desired species
Response to Environment
• Manage environments to favor resource conservation over resource capture
• Choose desired species with growth traits that maximize resource use and/ or have similar resource use to invasives
Life Strategy
• Slower establishing and growing desired species are favored by managing for low disturbances
• Species with diverse growth patterns enhance plant community stability
• Manage disturbance with less intensity and infrequency to favor slower growing desired species
Stress
• Stress can be used to favor desired species over invasives
• Stress invasives with grazing, herbicide, biocontrol to shift competitive balances
Interference
• Species with similar traits to invasives will have greater competitive effect.
• Choose species and plan establishment timings to increase competitive effects over invasive species
Integrated Planning and actions to be taken
Adaptive Management Applied
Time