



California State Parks Aspen Restoration Projects and Monitoring Sierra District

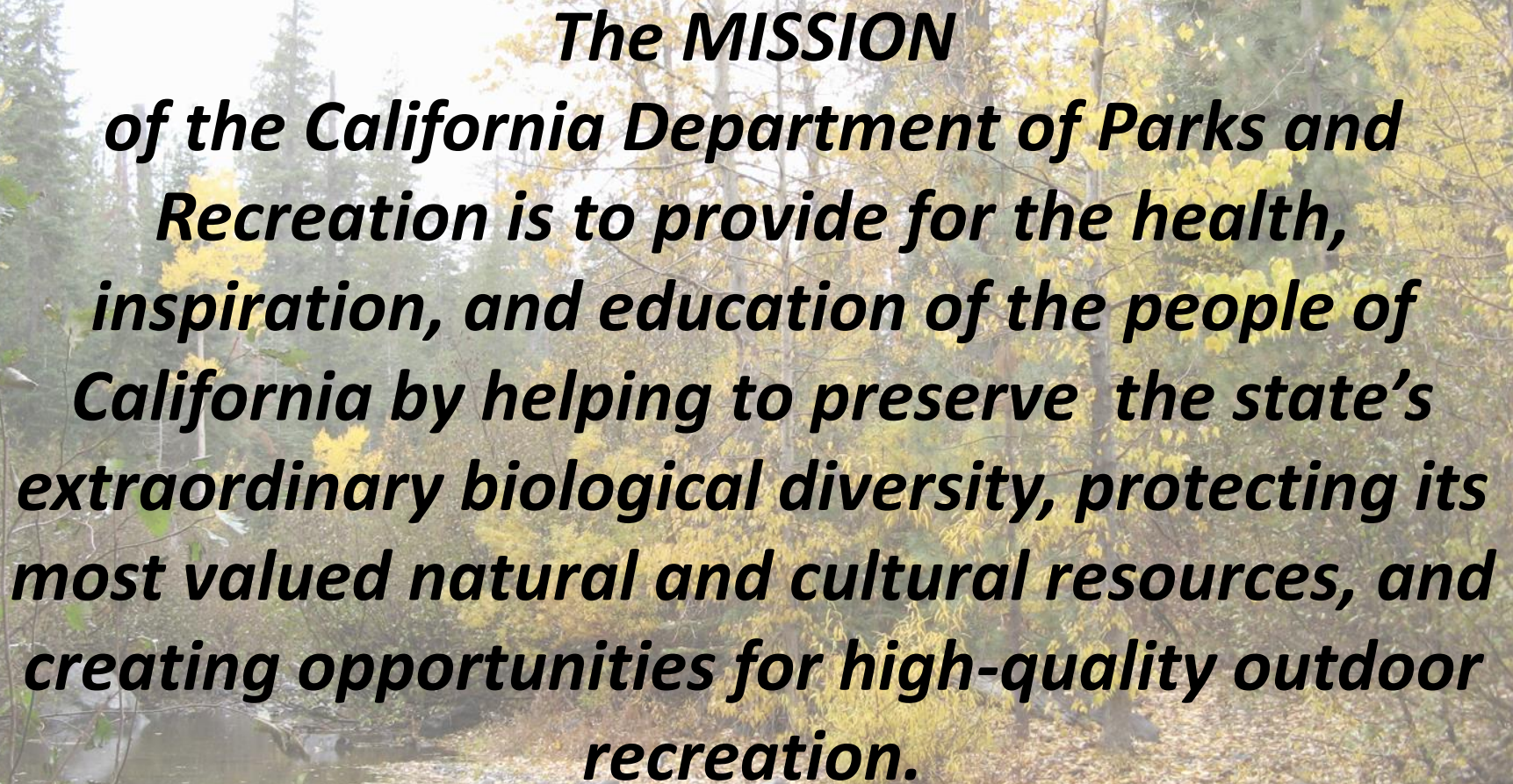


Silver Hartman

Skilled Laborer

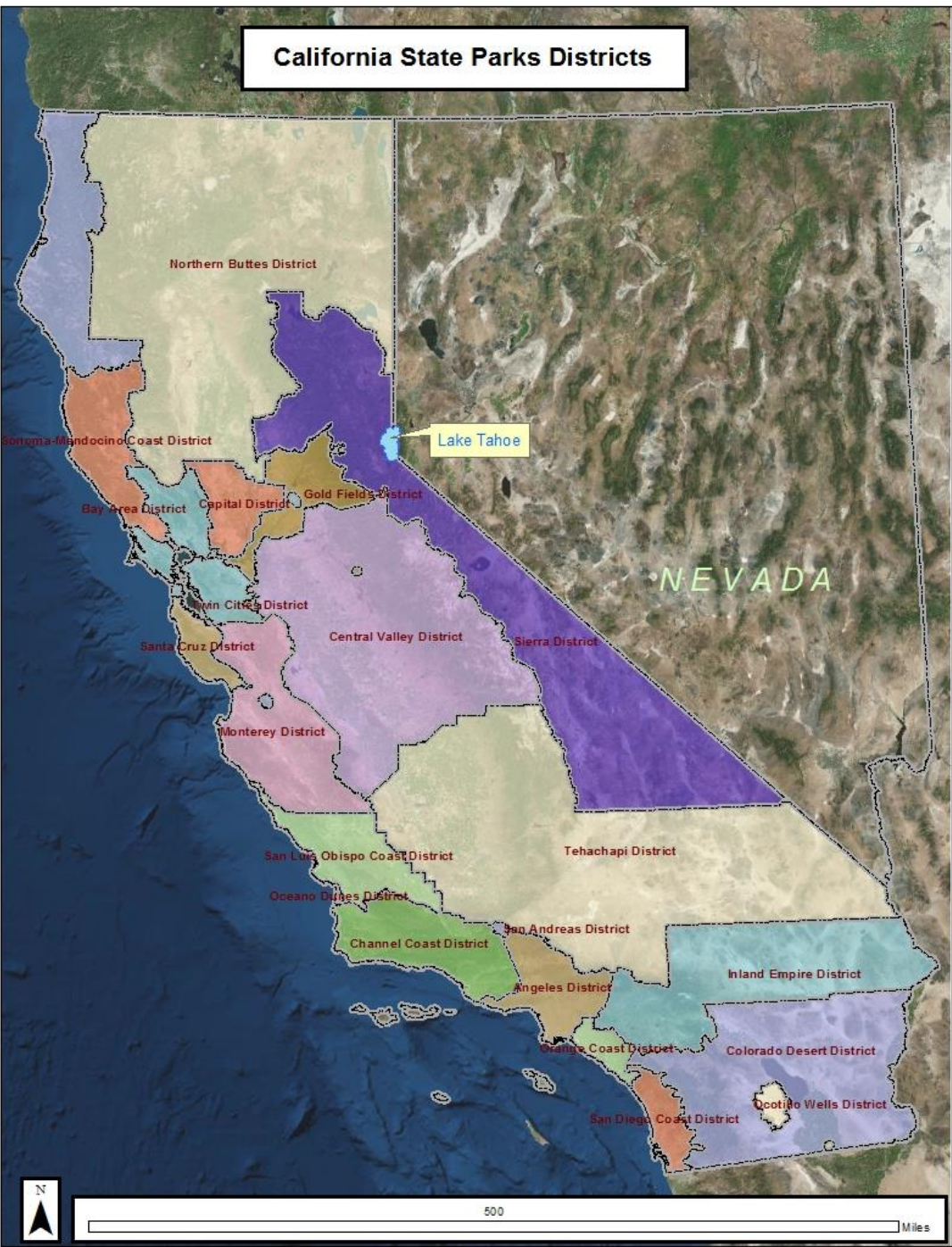
Agenda

1. Intro to the California State Parks
2. Aspen Stand Location and Condition Assessments
3. Riparian Hardwoods Restoration and Enhancement Project
4. Aspen monitoring
5. Aspen restoration at Donner Memorial State Park
6. Issues California State Parks are facing

A scenic view of a rocky stream flowing through a forest with vibrant yellow autumn foliage. The stream is filled with dark, smooth rocks of various sizes, and the water is clear and shallow. The surrounding trees are in full autumn color, with many leaves turned bright yellow and some still green. The background is slightly hazy, suggesting a misty or overcast day. The overall atmosphere is peaceful and natural.

***The MISSION
of the California Department of Parks and
Recreation is to provide for the health,
inspiration, and education of the people of
California by helping to preserve the state's
extraordinary biological diversity, protecting its
most valued natural and cultural resources, and
creating opportunities for high-quality outdoor
recreation.***

California State Parks Districts



1. Angeles
2. Bay Area
3. Capital
4. Central Valley
5. Channel Coast
6. Colorado Desert
7. Gold Fields
8. Inland Empire
9. Monterey
10. North Coast Redwoods
11. Northern Buttes
12. Oceano Dunes
13. Ocotillo Wells
14. Orange Coast
15. San Andreas
16. San Diego Coast
17. San Luis Obispo
18. Santa Cruz
19. Sierra
20. Sonoma-Mendocino
21. Tehachapi
22. Twin Cities

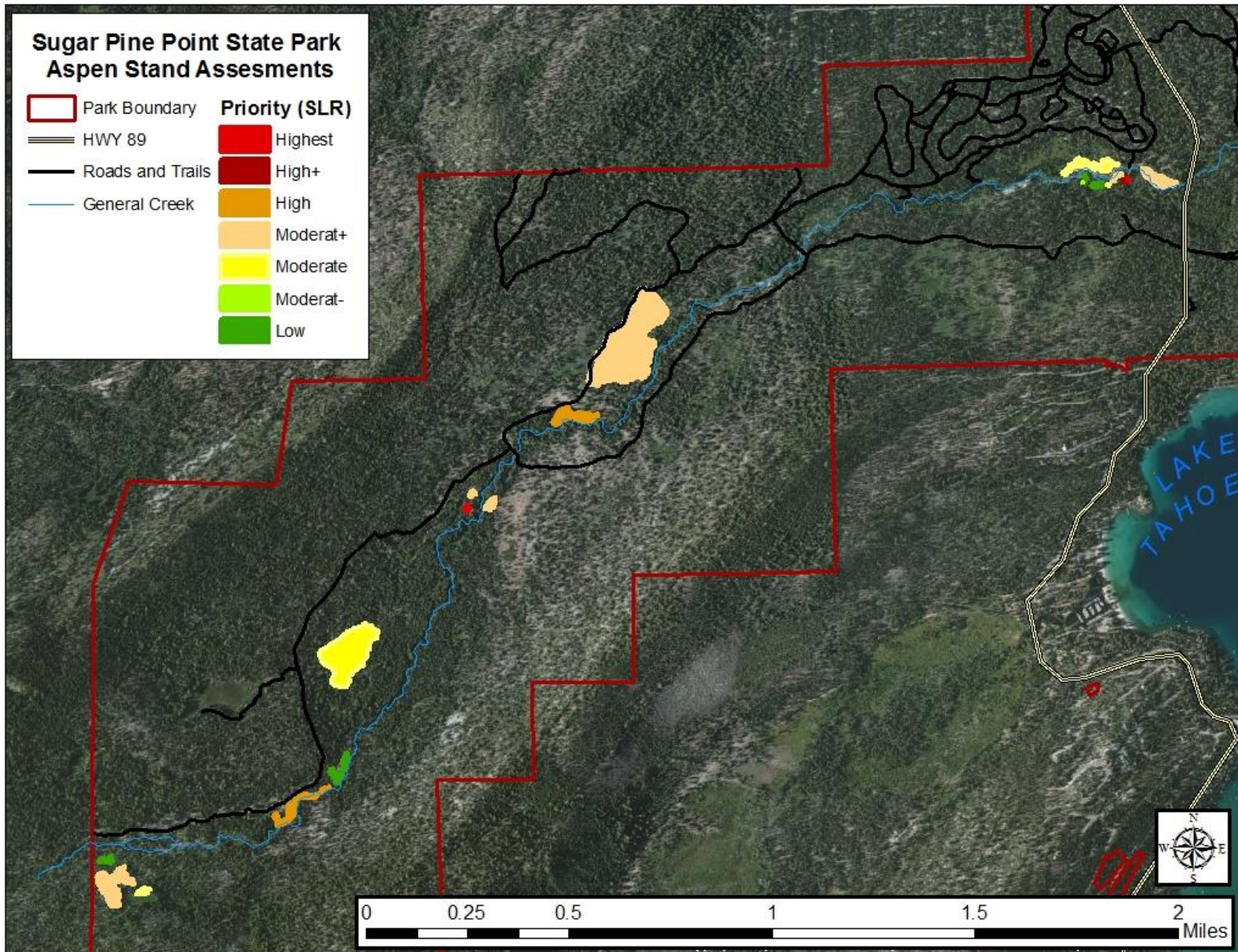
Aspen Location and Condition Assessments 2002 -2005





1. Burton Creek State Park
2. Donner Memorial State Park
3. Emerald Bay State Park
4. Plumas Eureka State Park
5. Sugar Pine Point State Park
6. Ward Creek Unit

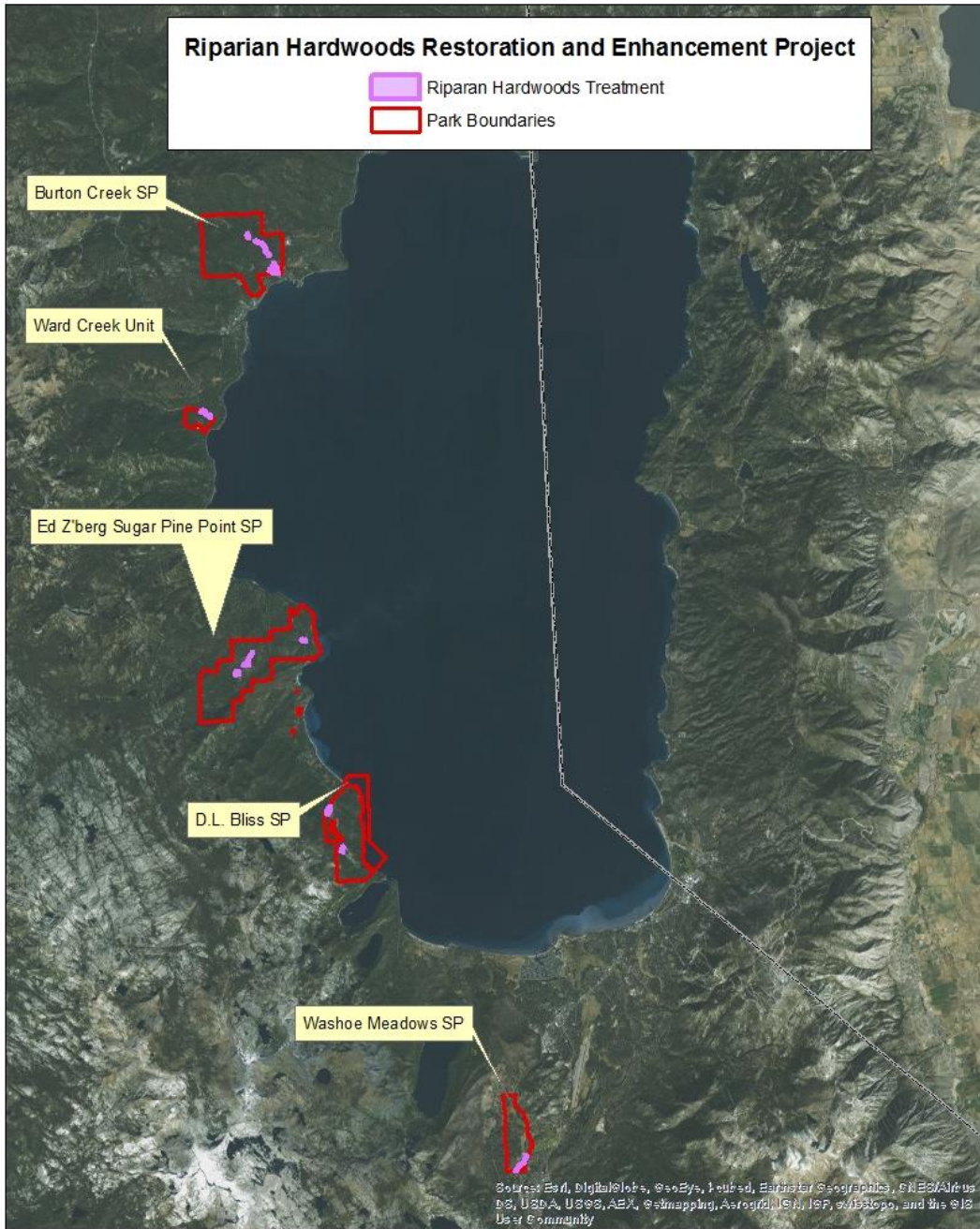
Aspen Stand Location and Assessment Map: Highlighting the **Stand Loss Risk Factor (SLR)**

- 21 Aspen Stands at Sugar Pine Point State Park



Riparian Hardwoods Restoration and Enhancement Project

-  Riparian Hardwoods Treatment
-  Park Boundaries



Riparian Hardwoods Restoration and Enhancement Project 2007-2009

- Five California State Parks in the Sierra District
 1. Burton Creek State Park
 2. Ward Creek Unit
 3. Sugar Pine Point State Park
 4. D.L. Bliss State Park
 5. Washoe Meadows State Park
- Bureau of Reclamation (BOR) Wetlands Grant
\$286,000
- In-Kind funding by CA State Parks
\$51,000

Purpose

1. Remove conifers from:

- Riparian corridors
- Meadows
- **Aspen** and Cottonwood Stands

2. Trail removal at Sugar Pine Point SP

Goals of this Project Specific to Aspen:

- ✓ **Remove conifers from 150 feet of aspen**
- ✓ **Increase light penetration**
- ✓ **Allow for stand regeneration and expansion**
- ✓ **Improve wildlife habitat**

Ward Creek Unit Pre Treatment:
WCS3, Photo Point 7, 2007



The Plan:

- Hand crews: State Parks, private and Nevada Division of Forestry (NDF)
 - Chip and remove slash/rounds
 - Build burn piles

Permits:

- CEQA/NEPA compliance & Mitigated NEG DEC
- Lahontan Regional Water Quality Board
- Tahoe Regional Planning Agency




❖ Working in Stream Environment Zones (SEZ)

Implementation

1. Flag project boundaries
2. Flag sites suitable for burn pile placement
 - Safe distance from:
 - aspen
 - watercourses
 - cultural resources
3. Mark trees
4. Install monitoring transects/photo points
5. Contract/State Park hand crews begin work
6. Hand crews rehab trails/walking paths
7. Chip roadside slash/remove rounds
8. Burn piles
9. Post project monitoring /photos



Aspen Stand Treatment

-  Riparian Hardwoods Treatment Areas
-  Park Boundaries
-  HWY 89

Burton Creek SP

Ward Creek Unit

Ed Z'berg Sugar Pine Point SP

Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroX, @swmaping, Aermap, IGN, IGP, swisstopo, and the GIS User Community

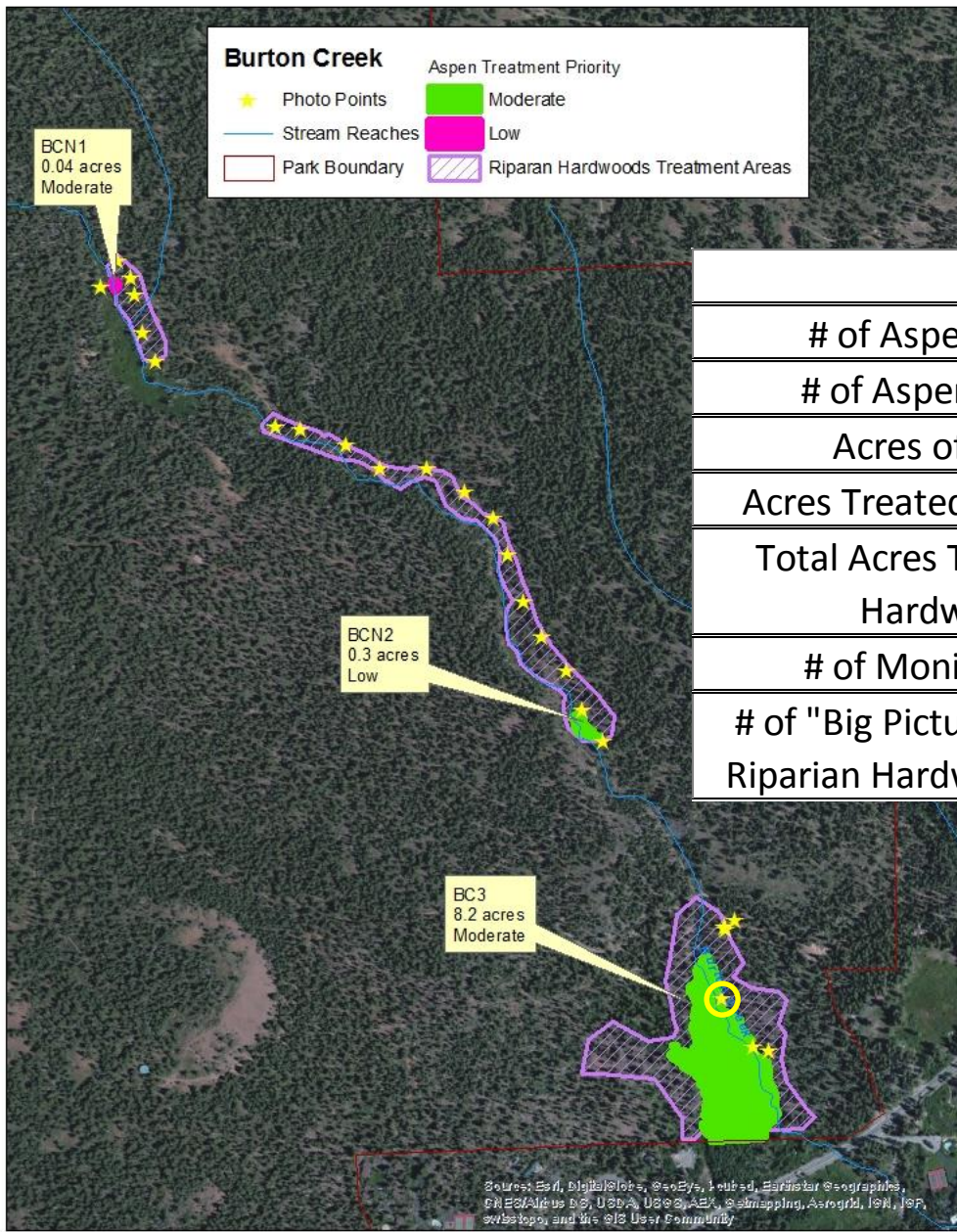
0 1.25 2.5 5 7.5 10 Miles



Three California State Parks with an aspen component:

1. Burton Creek State Park
2. Ward Creek Unit
3. Sugar Pine Point State Park

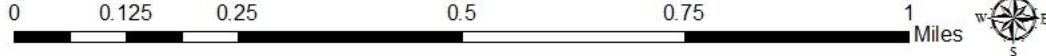
Aspen stands were chosen for treatment based on their accessibility and Stand Loss Risk Factor (SLR)



	Burton Creek SP
# of Aspen Stands in Park	3
# of Aspen Stands Treated	3
Acres of Aspen in Park	~8.5
Acres Treated in & Around Aspen	~11.5
Total Acres Treated for Riparian Hardwoods Project	~32
# of Monitoring Transects	0

# of "Big Picture" Photo Points (All Riparian Hardwoods sites included)	25
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

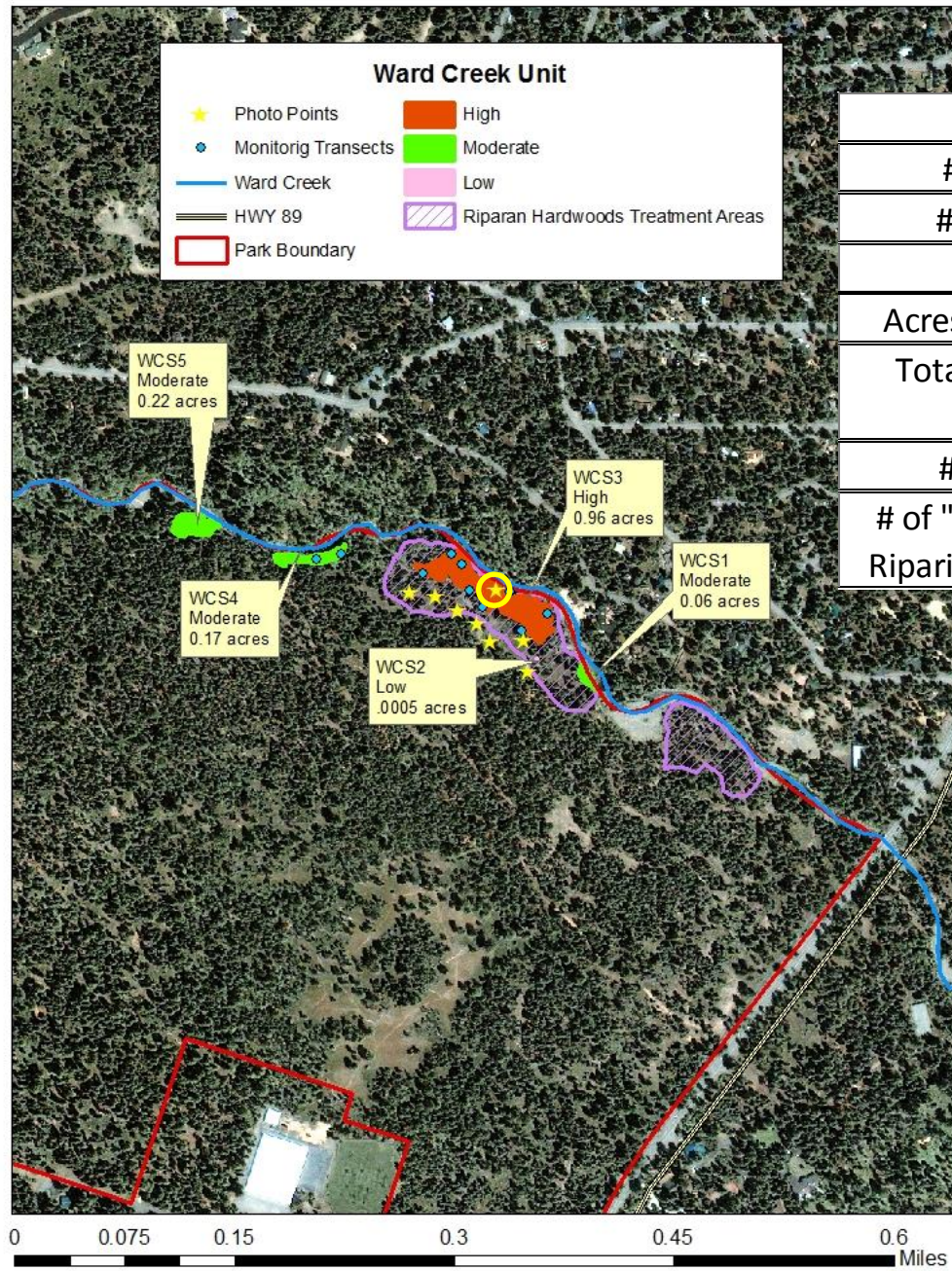


Burton Creek SP Pre Treatment:
BC3, Photo Point 4, 2007



Burton Creek SP Post Treatment:
BC3, Photo Point 4, 2010





	Ward Creek Unit
# of Aspen Stands in Park	5
# of Aspen Stands Treated	3
Acres of Aspen in Park	~1.4
Acres Treated in & Around Aspen	~3.75
Total Acres Treated for Riparian Hardwoods Project	~5.25
# of Monitoring Transects	5
# of "Big Picture" Photo Points (All Riparian Hardwoods sites included)	7



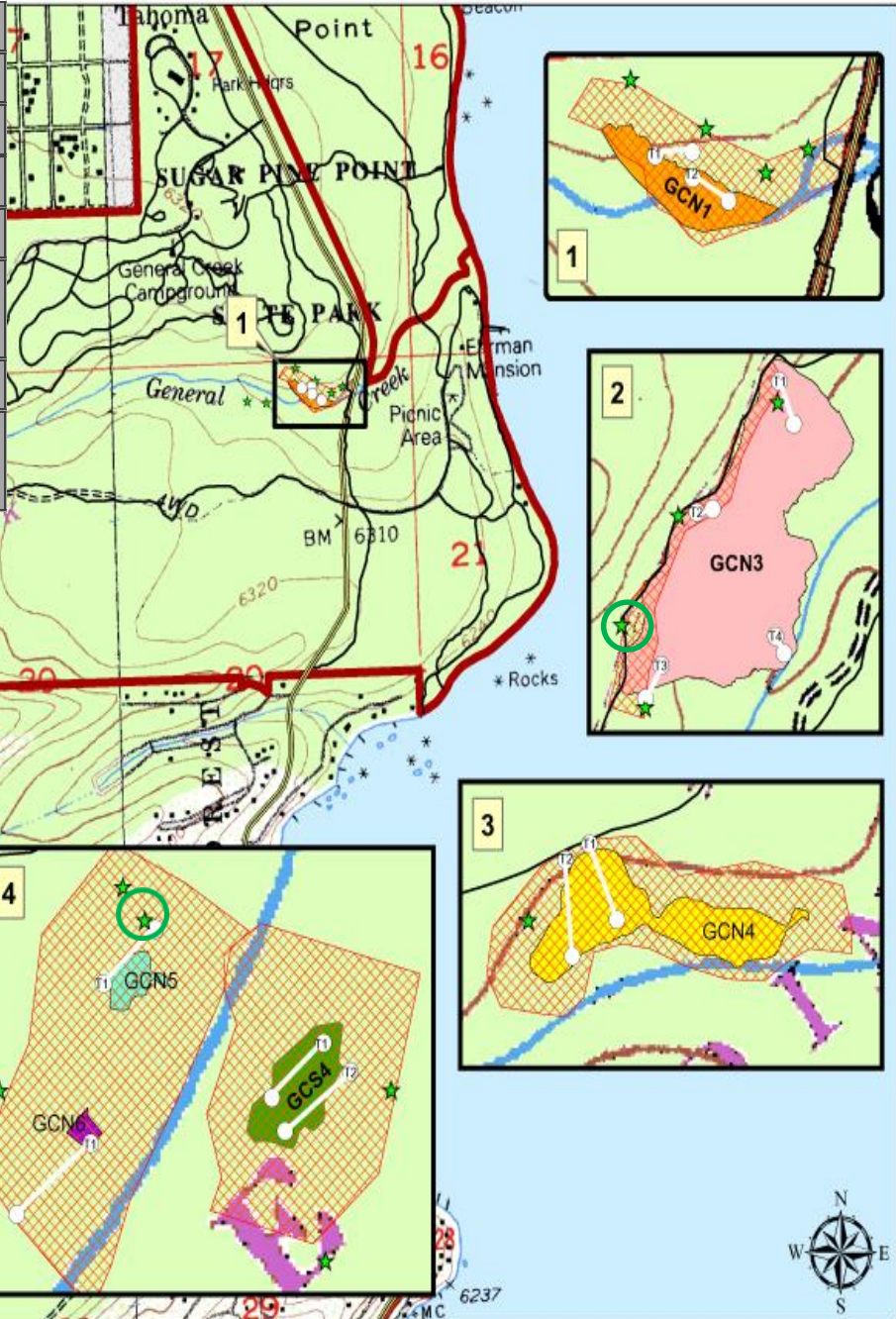
Ward Creek Unit Pre Treatment:
WCS3, Photo Point 5, 2007



Ward Creek Unit Post Treatment:
WCS3, Photo Point 5, 2011



	Sugar Pine Point SP
# of Aspen Stands in Park	21
# of Aspen Stands Treated	6
Acres of Aspen in Park	~30
Acres Treated in & Around Aspen	~13.75
Total Acres Treated for Riparian Hardwoods Project	~13.75
# of Monitoring Transects	17
# of "Big Picture" Photo Points (All Riparian Hardwoods sites included)	16



Sugar Pine Point SP Pre Treatment:
GCN3, Photo Point 9, 2008



Sugar Pine Point SP Post Treatment:
GCN3, Photo Point 9, 2008



Sugar Pine Point SP Pre Treatment:
GCN5, Photo Point 13, 2008



Sugar Pine Point SP Post Treatment:
GCN5, Photo Point 13, 2010



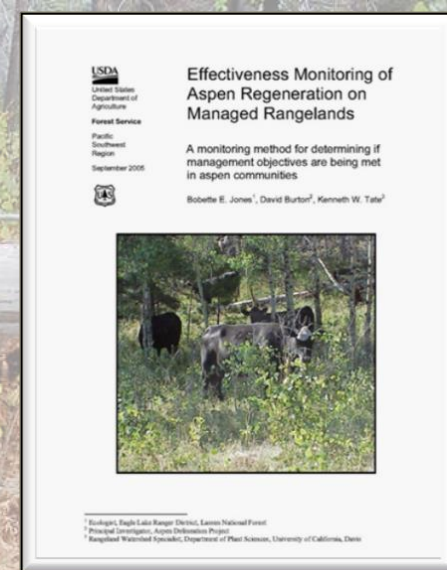
Aspen Monitoring

Photo Points

- To capture the “Big Picture”

Aspen monitoring Transects

- Protocol used: Effectiveness Monitoring of Aspen Regeneration on Managed Rangelands, 2005
- Installed 22 transects at two parks (Sugar, Ward)
- Data collection
 - Pre treatment: 2007
 - Post treatment: 2008, 2009, 2010 and 2013
- Data analysis scheduled for this winter



Monitoring Methods

Transect Installation:

- Permanent belt transects 100 ft. x 6 ft.
- 3 transects per stand (if possible)
- Each Transect is named, tagged and GPSed

Getting Started:

- Run measuring tape between ends of transect
- Prepare white board and place at base of rebar
- Take photos

Data Collection:

Count and record all aspen stems within 3 ft. of each side of the 100 foot transect.

- Size Class 1 = less than 18 inches tall
- Size Class 2 = greater than 18 inches tall and less than 5 ft.
- Size Class 3 = greater than 5 ft. tall and up to 1 inch DBH
- Size Class 4 = greater than 1 inch DBH



Aspen Effectiveness Monitoring Field Form

Park Name: _____ Stand Name: _____ Transect #: _____
 Date of Sampling: _____ Examiner(s): _____
 GPS Type: _____ Camera Type: _____ Focal Length: (recommend 35mm) _____
 Compass Declination: _____
 Directions to Transect Location: _____
(Make sure to photograph: A ---> B and B ---> A)

GPS PROJECTION: NAD 83 UTM

Transect GPS Coordinates, Side A:

Northing: _____
 Easting: _____
 Compass Bearing to B: _____

Transect GPS Coordinates, Side B:

Northing: _____
 Easting: _____
 Compass Bearing to A: _____

Distance	cs1: <18" (class size 1)	<18" Total	cs2: 18"-5' (class size 2)	18"-5' Total	cs3: >5'-1" dbh (class size 3)	>5' - 1" dbh Total	cs4: >1" dbh (class size 4)	>1" dbh Total	Canopy Cover	Shrub Cover
0-10									0-	0-1'
10-20									10'-	10'-11'
20-30									20'-	20'-21'
30-40									30'-	30'-31'
40-50									40'-	40'-41'
50-60									50'-	50'-51'
60-70									60'-	60'-61'
70-80									70'-	70'-71'
80-90									80'-	80'-81'
90-100									90-	90-91'
Totals									100-	99'-100'

Sign of beaver activity? YES or NO (circle one) If YES Explain: _____

Sign of other browsing? YES or NO (circle one) If YES Explain: _____

Conifer encroachment? YES or NO (circle one) If YES Explain: _____

Donner Memorial State Park

- Date: 2002-2004
- Size & Location: 20 acres/Coldstream Canyon
- Treatment: logs removed, slash put in burn piles
- Monitoring: 4 Transects
 - (Draft) Long-Term Density Monitoring of Aspen for Conifer Removal Projects
- Maintenance: Lop/scatter in 2008



Donner Memorial State Park 2011



Donner Memorial State Park 2011

Qualitative Observations & Reflection

1. Suckering
 2. New growth/more leaf area
 3. No big change
- (Protecting the stand from future loss)



What caused different outcomes?

Theories for Response Variability

Different Stand Characteristics

- Stand Loss Risk (SLR) factors (general stand condition or health)
- Stand size
- History
 - Previous treatments
 - Beaver presence/impacts
- Surrounding conditions

Treatment Variability:

- Treatment intensity
- Burn pile placement and burn intensity

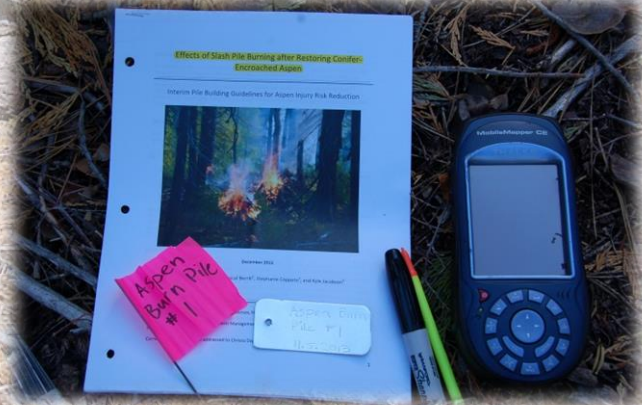
Issues

- **Funding**
- **Staff time**
- **Burn pile placement in aspen stands**
- **Beaver**

Burn Piles in Aspen Stand

An Example at Emerald Bay State Park

- Date: ongoing (2012)
- Size & Location: general forestry projects that include aspen stands
- Treatment: hand crew thinning/burn piles
- Monitoring: 2013 burn pile monitoring installed, piles not burned yet.



Site: _____
 Date: _____

Crew: _____

BP Mapping of Aspen

Burn Pile #	Tree Species	Horizontal Distance (HD)	Azimuth	Dbh mm	Heitght m	Crown Height m	Pre Health	Notes (include if tree is hidden)

HD taken from edge of burn pile at breast height
 Azimuth taken from tree looking back to center of burn pile

Pre Heath notes: SK = sick, SC = scar, FK = forked, BT = broken top, DT = dead top, HR = heart rot, LN = leaning

North American Beaver



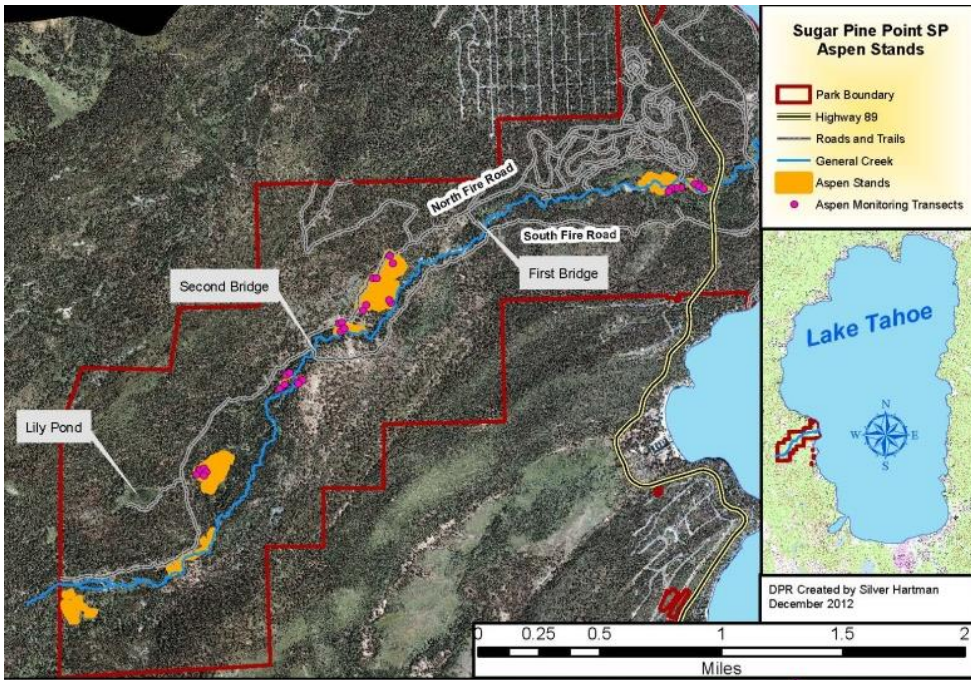
1. Sugar Pine Point SP
2. Emerald Bay SP
3. Lake Valley SRA
4. Donner Memorial SP
5. Burton Creek SP
6. Plumas Eureka SP
7. Most likely others

Sugar Pine Point State Park Beaver/Aspen

- 2007:
 - Current/historic beaver
 - Varying intensities
- November 2012:
 - beaver activity on the rise
- 2012 monitoring plan established:
 - Regular site visits
 - Assess the impact of beaver on aspen to use as a guide for management decisions



Sugar Pine State Park Beaver and Aspen 2013



GCS4

- Dramatic increase in aspen predation between sites visits on October 22 and 30th.
- Portion of the stand fenced

GCN5

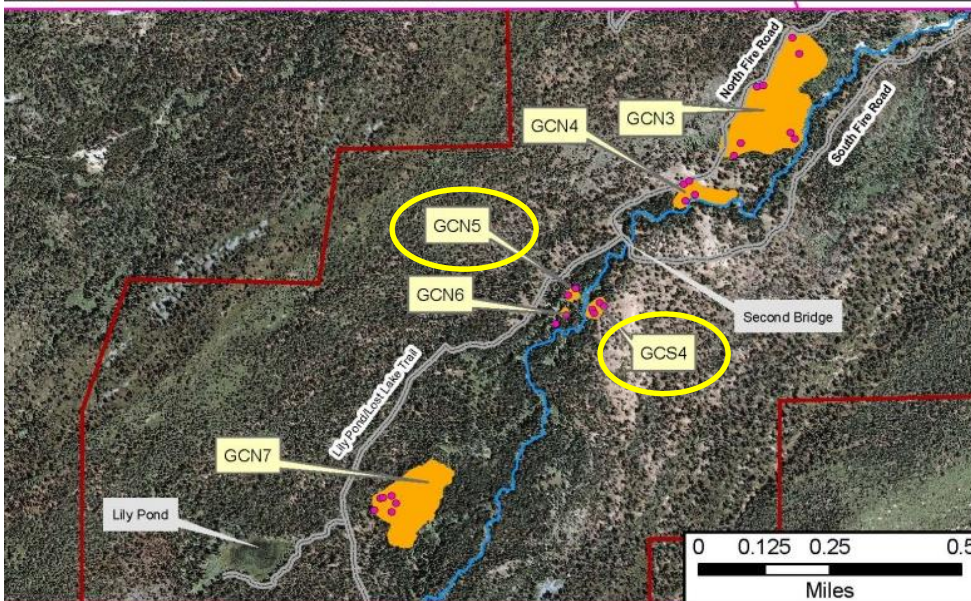
- 53 aspen were harvested between July and November
- 13 fences were installed protecting the remaining 19 aspen stems

GCN4 and GCN8

- Beaver present but no monitoring or management actions taken

GCN3, GCN6 and GCN7

- No new signs of beaver
- ❖ Did not check the remaining stands





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