



Butano State Park Management Plan

Team #19

Who we are



Brooke Miller



Miles Hagan



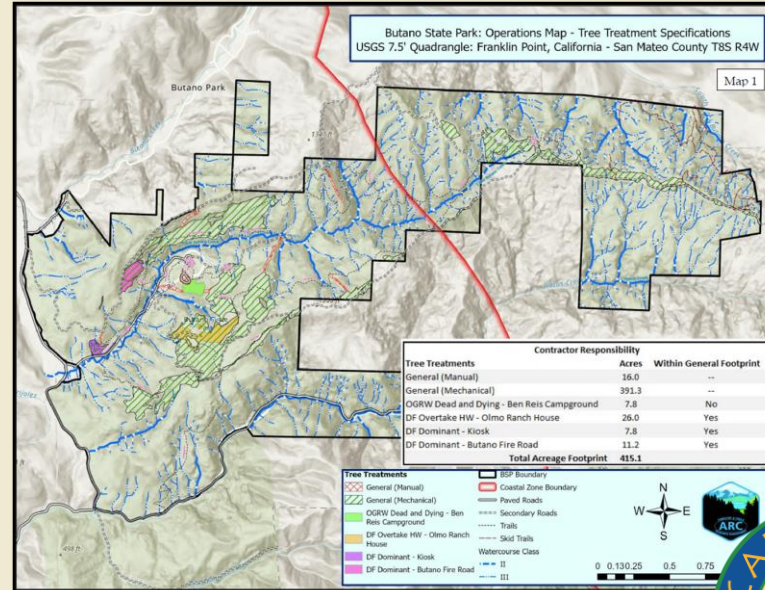
Tasnim Shamsul



Introduction

History of Butano State Park

- Inhabited by Native Americans
 - Prescribed fire in meadowlands
- Homesteaders settled
 - forests were drastically affected
- California State Parks acquired land in 1956
 - Area almost doubles in size, currently 4,000 acres
 - Priority location for fuel reduction treatments
 - Absence of low intensity fires



Objectives & Goals of our park



Butano State Park Forest Health Project

- Forest is susceptible to disease and shifts in species composition (*hardwood forests being converted to Douglas-fir forests*)
- Promote biodiversity and improve forest health (reduce fire risk)
- Priority location for forest health fire fuel reduction treatments
 - * **REMOVING DOUGLAS-FIRS** by mechanical mastication & thinning

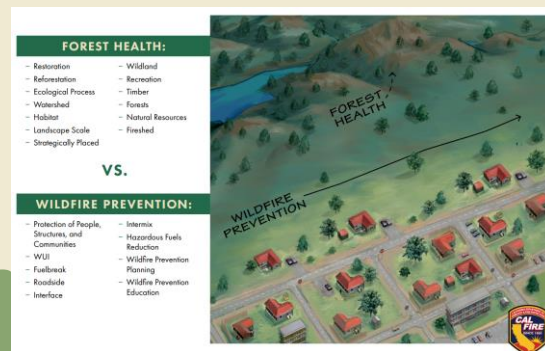


CalFire Forest Health Grant Program Objectives

\$750,000 to \$7 million

- **Reforestation**
- **Forest fuels reduction**
- **Prescribed fire**
- **Pest management**
- **Biomass utilization**
- **Large, landscape-scale projects**

These objectives line up with the objectives and goals of Butano State Park!



2 DF Treatments

Wood Chipped and piled

Pros

- Aesthetic
- No transport
- Less fossil fuel burned

Cons

- Chipping cost
- Carbon release
- Fuel on landscape
- Wasted
- **OVERALL
LESS
EFFICIENT
COST-WISE**

Cost= \$5605

Net loss = \$5605

Commercialization

Pros

- Made into an in demand product
- Carbon sequestered
- Removes landscape fuel
- **OVERALL
MORE
EFFICIENT
COST-WISE**

Cons

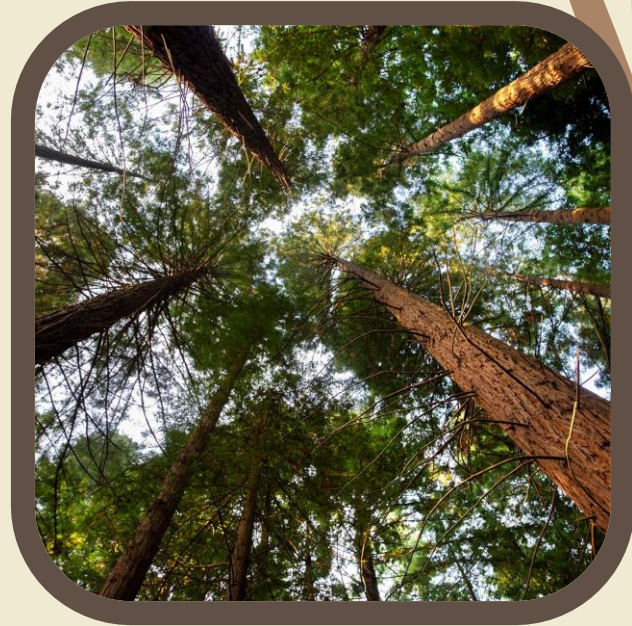
- Transportation cost
- Fossil fuel in transport

Cost= \$2080





Net loss = \$280

Data Collection & Tools

Overview on what data was collected
and the methods used to acquire the
data



Kiosk Unit Cruise Results

	Data	Tools Used	Pictures
Volume of Douglas-fir per acre	28,450	Diameter tape, Transect Line, & Compass	
Basal Area measured by angle guage	223 sq. ft ² per acre	40 BAF Angle Gauge	
Percent (%) Canopy Cover	86%	Densitometer	
Hardwood stems per acre	30 stems	Dichotomous Keys	



Our Treatments

Portable Saw Mill for Recreational Purposes

- **Portable Saw Mill to create on site with Douglas-firs:**
 - Benches
 - Picnic tables
 - Informational Kiosks
 - Bathrooms/outhouses
 - Cabins to rent out (need to be pressure treated: expensive)



Possible Kiosk example



Portable Saw Mill: Benefits and issues

Pros	Cons
<ul style="list-style-type: none">- Less transportation costs- Benefits the public- Info Kiosks educates public- Beautifies site- Increases accessibility to visitors- Local, non-imported wood- Creates jobs- Spreads out fuel	<ul style="list-style-type: none">- Will run out of space eventually- Portable Saw Mills are loud and can cause complaints- May close off trails for space- If untreated, will rot eventually- Products will take longer to be created than taking to a traditional saw mill- Fuel not leaving landscape

Education of the Public

Brochures

- ❖ Distributed throughout the park through informational kiosks made on site
- ❖ Carbon sequestration
- ❖ Advertises Butano State Park (BSP)
- ❖ Informs tourists of Butano State Park Issues
- ❖ Opens minds of the public
- ❖ Recyclable
- ❖ Possibility of litter

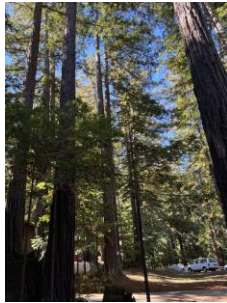
Social Media/Website

- ❖ Advertises Butano State Park
- ❖ Reaches a broader audience



Butano Issues

- Wildfires
- Overstocked
- Douglas-fir Stands
- Lack of biodiversity
- Competition
- More susceptibility to diseases



Why is forest management important?

- It protects the forests from diseases
- Allows the forest to flourish & become greener (healthier)
- Lasts longer
- Less susceptible to the spread of high intensity fires

How to help & volunteer

- Check out the Butano State Park website
- Scan this QR code



Biochar

- **Agriculture focus with the wood leftover once space runs out in our site**
 - According to RPF David Lennyp, Biochar is carbonized burnt wood incorporated in agriculture
 - Holds nutrients & water in agriculture
 - \$9 per cubic foot



Biochar: Benefits & Issues

Pros	Cons
<ul style="list-style-type: none">- Many agricultural areas nearby- New and upcoming, can be alternatives to farmers- Reduces fertilizer runoff & need for fertilizer- Stores CO₂- Enhanced crop yields- Removes fuel from site- Decreases pathogens- Increase sunlight	<ul style="list-style-type: none">- Biochar is expensive- Not many carbonators to make Biochar- Biochar is new and not very marketable- Oxygen sink- Not standardized- Can take years for benefits to show

Timeline for Treatment Plan

Remove DFs

Remove Douglas-firs to reduce competition, fuel, and support biodiversity



1

Saw mill

Hire workers for portable saw mill, create on site



2

Implement

Implement benches, kiosks with education/brochures, tables, etc



3

Biochar

Once space runs out, take wood off site to create into biochar & sell/give out



4

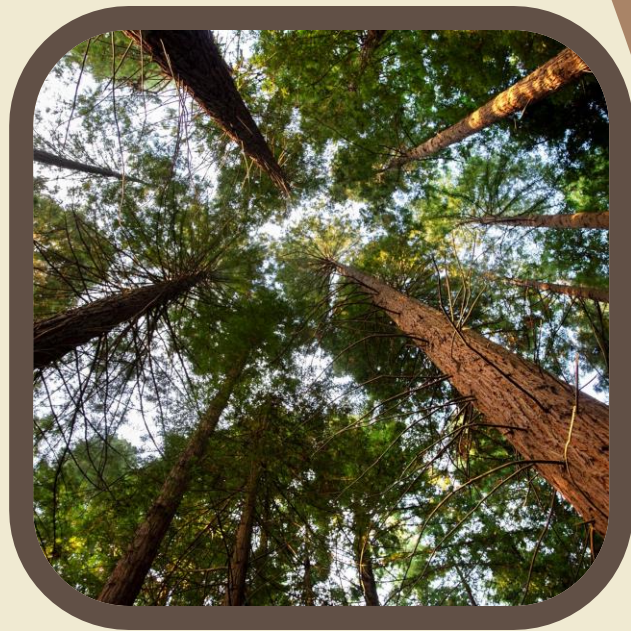
Manage

Replace damaged items and continue the process



5

Conclusion



Conclusion

“I love what I do... I feel like I can live forever” –Kristy Peterson



What we are trying to achieve?

- 2 treatment plans
 - Biochar
 - Portable Sawmill

What does this mean for the forest and the park?