

Energy Opportunities for Woody Biomass

Workshop opening (12:00 – 12:15)

Setting the stage (12:15 – 1:00)

Forest health and biomass supply

Biomass basics

Scales of biomass technology

Biomass project development (1:00 – 2:00)

What makes a good project

Break

Biomass project examples

Biomass energy on the San Juan Islands

Wrap-up (2:00 – 3:00)

Discussion and Q&A

Closing

San Juan County, Washington

Community Wildfire Protection Plan/Wildfire Risk Assessment



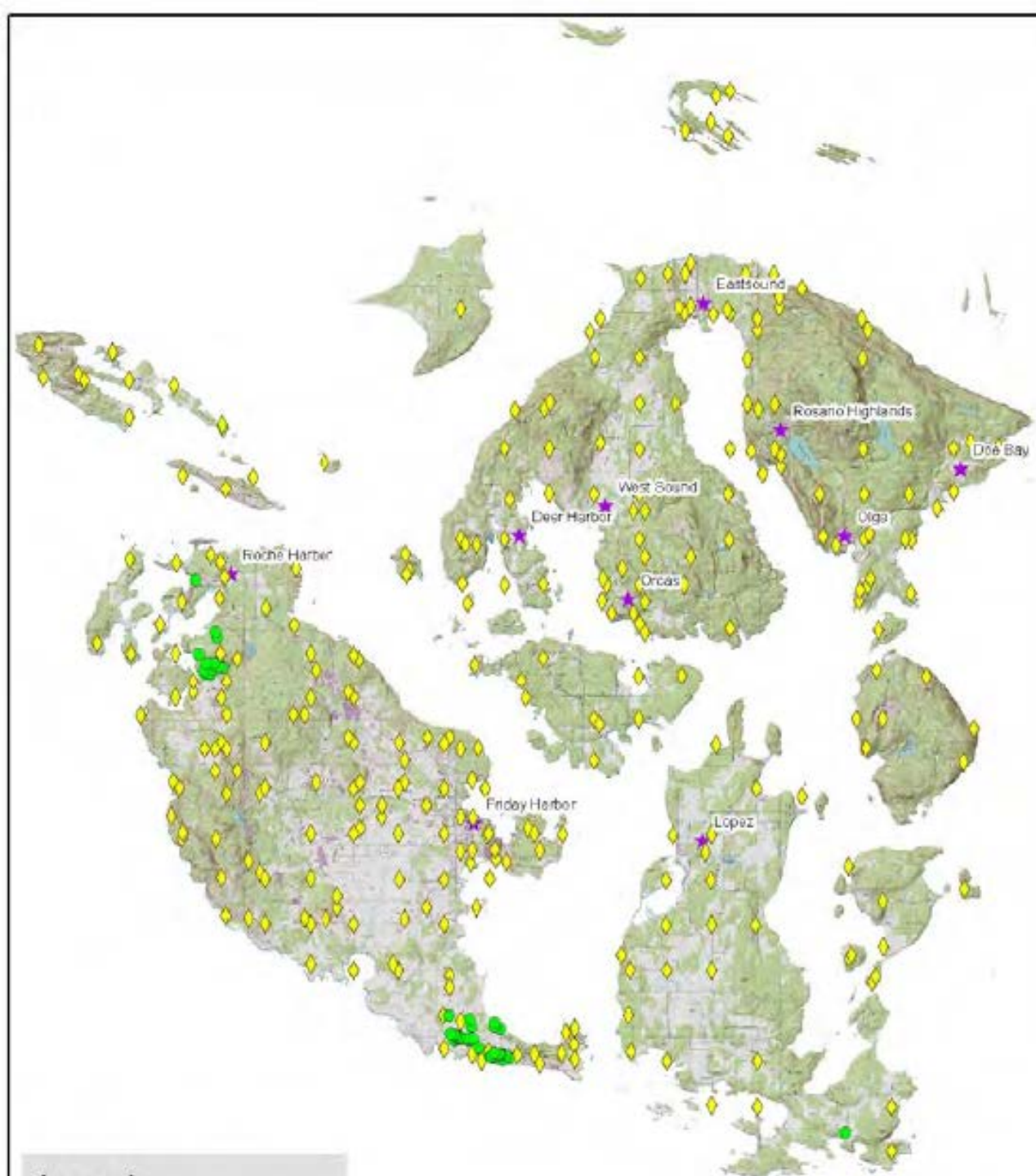
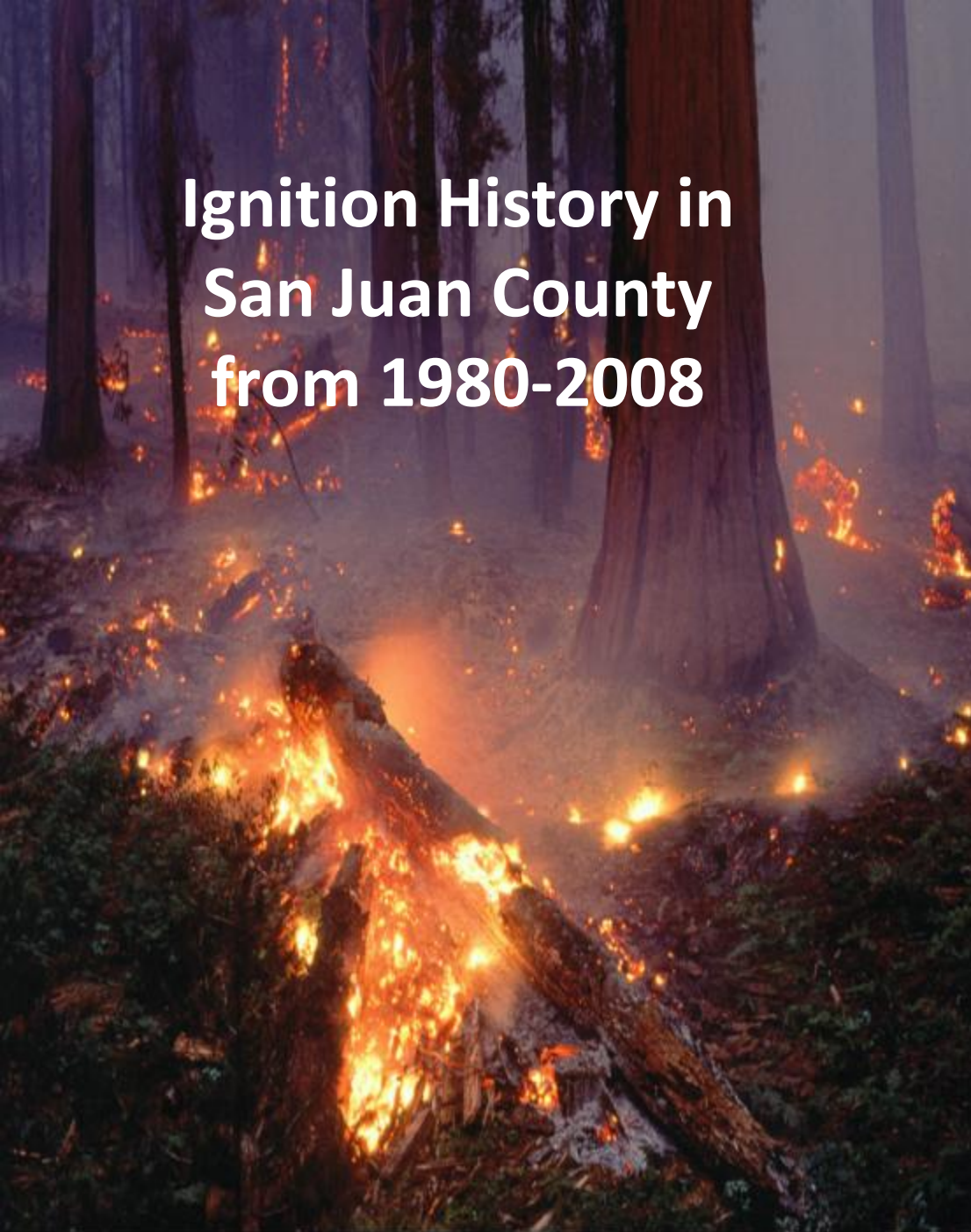
2010 Satellite Island Fire

Adopted by the
San Juan County Council
August 2012



85,000 acres
in need of fuel reduction

Ignition History in San Juan County from 1980-2008



Management implications:

- Historic fires burned at least every 7-20 years in some areas.
- Current fire-free period (105 years), longest in at least 500 years.
- Major challenge in returning fire to landscape, different cultural needs
- Fire or *fire surrogate* may be needed to ensure forest health



How much woody biomass?

Turtleback Mountain Forest and Carbon Inventory 2010



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How much woody biomass?



Average: 36 MBF/acre (~10 log trucks)
85,000 acres need thinning
Total biomass: 3 billion bf

40% thinning in 2018
1.2 billion bf
1.7 billion dry tons

2040
Average: 61 MBF/acre



Pre-commercial Thinning Costs

- Cut and slash - \$600/acre
- Cut, pile & burn - \$800 - \$1,000/acre
- Cut & chip - \$1,100 - \$1,700/acre
- Mechanical - \$1,300/acre
- Work party – beer & brats!



Environmental Quality Incentives Program (EQIP) Program Guide



Practices	Payment Rates
Forest management plan	\$1,065 - \$1,280 (<20 acres)
Pre-commercial thinning	\$344/acre
Forest slash treatment	\$279/acre
Downed large wood	\$119/each
Wildlife habitat pile	\$163/each
Pruning	\$256/acre
Fence	\$3.49/ft.
Site prep for planting, light veg.	\$209/acre
Stream crossing, culvert <3' dia.	\$333/ft
Tree planting with cages	\$545/acre
Bird/bat nest boxes	\$32/each

Biomass wood pellet machine



SAWDUST

Sawdust

demand:

Size: <6mm

Moisture: 15-20%

Model: XGJ560

- Power: 90kw
- Capacity: 1-1.5t/h
- Weight: 6.1T
- Dimension: 2.6x1.3x2.3m



Pellet size: $\Phi 6\text{mm}$; $\Phi 8\text{mm}$



Next Steps

1. Coalition of the willing
2. 2018 grant
 - Biochar production & marketing
 - Woody biomass inventories
 - Forest management training
 - Bioenergy opportunities
3. 2019 grant
 - Business feasibility study
 - Biochar
 - Bioenergy
 - Firewood



Thank You!

