

Climate Change Coordinators Meeting 2019

Some Chippewa National Forest Projects

Projected Climate Change in North Central Minnesota

- Already warmer, wetter
- Future: more extreme change
 - Especially warmer summer, fall, winter
 - Slight decrease annual precipitation
 - Especially drier summers; likely greater drought stress during growing season

Tree habitats shift to northeast

- Boreal tree species as losers; hardwoods as winners

- CNF Forest Plan 2004 - not much about climate change; RNV
 - MN Vulnerability Assessment available ~2013
 - FAR used on (every) **most** major veg management projects SOP? **Are we keeping our focus?**

Adaptive Silviculture for Climate Change

NRS, Universities, CNF

- Multi-region network of sites
- Cutfoot Exp't Forest: Red Pine

Resistance: Keep red pine dominance, thin down to increase drought tolerance

Resilience: Allow some change, RP dominance, increase future-adapted species through VDT of 0.5 ac skips, gaps, plant future-adapted spp like WP, RO, BO, RM

Transition: Facilitate change, reduce RP to 20 - 50%, multicohort structure, expanding gaps irregular SW, plant future-adapted spp + novel species (WO, bitternut hickory, black cherry, ponderosa pine)



- ✓ Design
- ✓ Harvest
- ✓ Planting

Black Ash Treatments anticipating EAB

Goal: Keep wetlands forested

Overstory:

Group selection (0.4 ha gaps)

Clear-cut

Girdle (simulate EAB)

Planting:

Balsam poplar, Q. aspen

E. Cottonwood

Red maple

N. white cedar, Tamarack

American elm, etc.

+ 2 more southern:

hackberry, swamp w. oak



Warming winters; invasive species

NRS,
Universities,
CNF

- ✓ Harvest
- ✓ Planting
- ✓ Evaluation

SPRUCE PROJECT

Spruce-Peatland Response under Climate and Environmental Change

Peatlands are currently big sinks for carbon; what will climate change mean?



- \$50 Million, 10 year project
- 10 Enclosures
- 5 temperatures; CO2

Vegetation, Soil
Microbial communities
Chemistry
Hydrology
Gas Flux

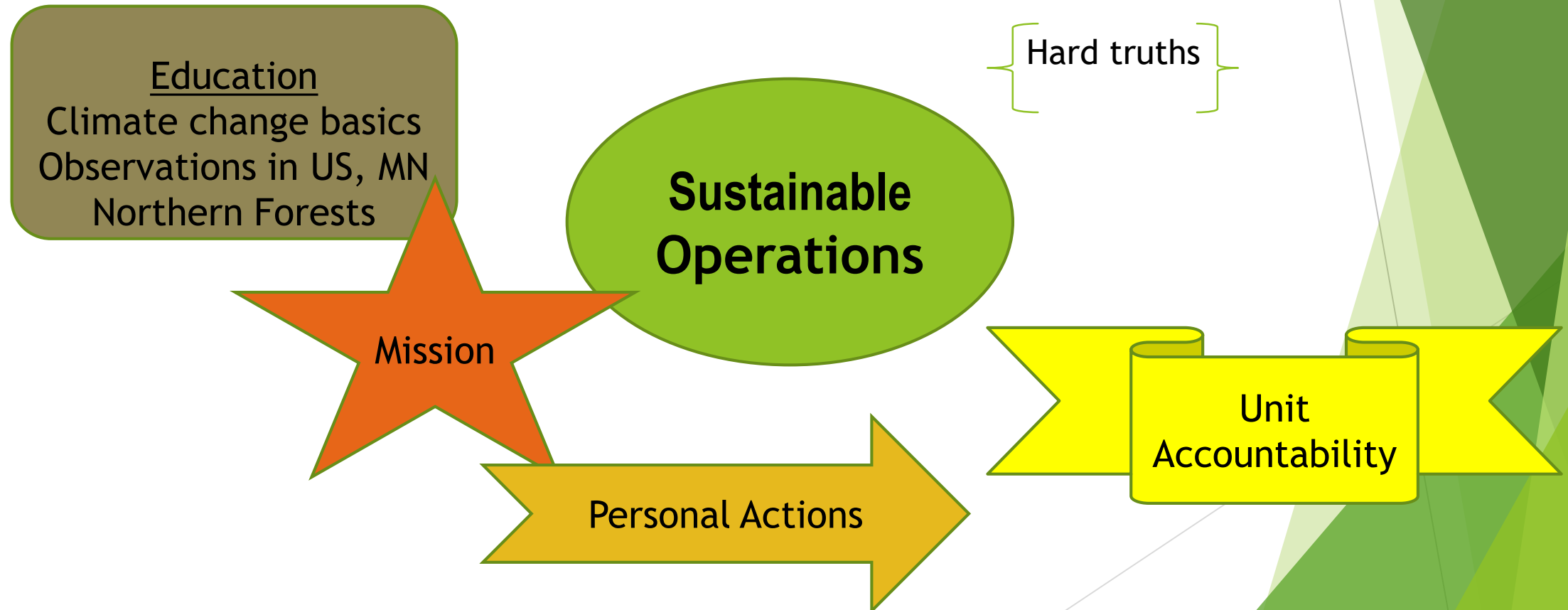
✓ NEPA

NRS, USDOE, Oak Ridge
Nat Lab, EPA et al. on
Marcell Exp't Forest

Sustainable Op's Road Show

Element 10: Sus Op's

Changing our Culture through Climate Change Engagement



Will You Make Ripples?

