San Bruno Mountain History

- 1983 Habitat Conservation Plan
  - Protects four federally protected species within the HCP management area
    - Mission blue butterfly
    - San Bruno elfin butterfly
    - Bay checkerspot butterfly
    - Callippe silverspot butterfly
  - Allows for “chaining and scraping/raking” managing woody vegetation in historically grassland areas
  - Has been adapted, via approval of USFWS, to include mastication and crushing via mechanized equipment
Gorse (*Ulex europaeus*) and San Bruno Mountain

- Fabaceae
- Introduced to California prior to 1894
- Seeds can spread about 6’ from mother plant
- Colonizes on low nutrient, infertile or sandy soils
- Tends to establish well in areas where it can access water table
- Most growth in Spring and early Summer. Growth slows from moisture stress in Summer and Fall
- Flowers in March at San Bruno Mountain
- Roughly **52 acres** of dense gorse within HCP property boundary.
- About **7 Acres** of dense gorse in private property in adjacent areas.
History of Gorse Management

• 1983 – park staff and volunteers manually removed dense thickets
  • Manual Labor estimated at 350 hours/acre

• Mechanical chaining of gorse
  • Bulldozers towing ship anchor chain. Ripping mature gorse from soil

• Prescribed burning
  • Difficult to achieve effective control
    • If not thoroughly burned, can stump sprout
    • Seedbank is known to be flushed with heat after fire
  • Volatile oils in the stems and leaves can exacerbate the prescribed fire
  • Erratic low to moderate winds at San Bruno Mountain can trigger cancellations of prescribed burns
2004-2008 Pilot Gorse Removal Project

- Grant funded project to remove 31 acres of Gorse
- Led by May & Associates and Shelterbelt Inc.
  - Local CNPS and Sand Bruno Mountain Watch members also provided expertise and guidance
- Dense gorse stands: 90-100% cover
  - Masticated using boom arm masticator
    - Mulch spread in a dense layer 3-5 inches thick, but no thicker than 6 inches
    - “Hot Composting”
    - 3 years follow-up in all areas including other weed suppression
    - Now mostly *Holcus lanatus* grassland
- Scattered gorse stands: 6-25%
  - Mostly foliar sprayed or cut stumped
February, 28 2020 Fire

- About 5 acres burned
  - Almost entirely gorse
- Unknown ignition
- Homes within 200’ of perimeter
- North County Fire and CalFire responded to event
  - Trails acted as Natural Fire Breaks
  - Fire lines still cut, but inside the trail boundary
Community Response & Treatment Approach

- Neighbors and community leaders urged County parks to control Gorse immediately

- Best Treatment option was determined to be fall 2020 to avoid bloom/seed period
  - Challenges with red flag days
  - Late fall treatment allowed for dry soil conditions minimizing deep soil disturbance
2020 Mechanical Treatment

- ~7 acre Gorse stand
  - Mastication with SMCP Caterpillar 299

- ~5 acre burned Gorse stand
  - Dozer used to crush gorse in burn site
  - Break down biomass of gorse skeletons
  - CalFire will bring in brush rake to create burn piles
Follow-up Treatment

• Foliar of small sprouts and outliers
  • 1.5% Roundup Pro Max
  • 80-100% coverage
  • Last week Go Native foliar treated gorse in areas south and east of mastication
    • Including small gorse on outskirts of 2004-2008 management area

• Grazing
  • Considering goat grazing for gorse control
    • Would be a couple years as we continue to monitor success of initial treatment

• Other weeds
  • Burn area:
    • Solanum, Poison Hemlock, Sweet Pea, Cape Ivy, Himalayan Blackberry, Thistles, Ice Plant
  • Masticated area:
    • English ivy – under Monterey pine
Future Mechanical Treatment?

- Slopes on east side of Saddle
  - Too steep for man-operated masticator
  - Could use Green Climber
    - Remote operated can handle fairly steep slopes
    - Go Native would need to get current equipment modified for it
    - San Mateo Fire Safe Council recently obtained one via Cal Fire CCI grant funding
QUESTIONS?