

# ORGANICS MANAGEMENT AS A KEY ELEMENT TO HABITAT RESTORATION AND ECONOMIC DEVELOPMENT AT SANTA ANA PUEBLO



New Mexico Recycling & Solid Waste Conference  
September 26<sup>th</sup> 2018



# Santa Ana DNR History

- Established in 1996 to combat invasive species
- Directed by Tribal Council to develop and implement natural resource management programs which protect, preserve, and enhance the natural living environment for current tribal members and future generations
- 5 divisions - Restoration, Range & Wildlife, Water Resources, GIS & IT, and Conservation Enforcement
- 2 programs - Environmental Education & Community Outreach and Environmental which oversees the Pueblo's Solid Waste



# Issues Faced By Santa Ana

- River Degradation
- Habitat Loss & Fragmentation
- Endangered Species Populations
- Invasive Species
- Declining Plant Diversity
- Hazardous Fuels
- Drought and Climate Change
- Erosion
- Trespass (both human and feral livestock)
- Cultural Resource Protection
- Solid Waste Management

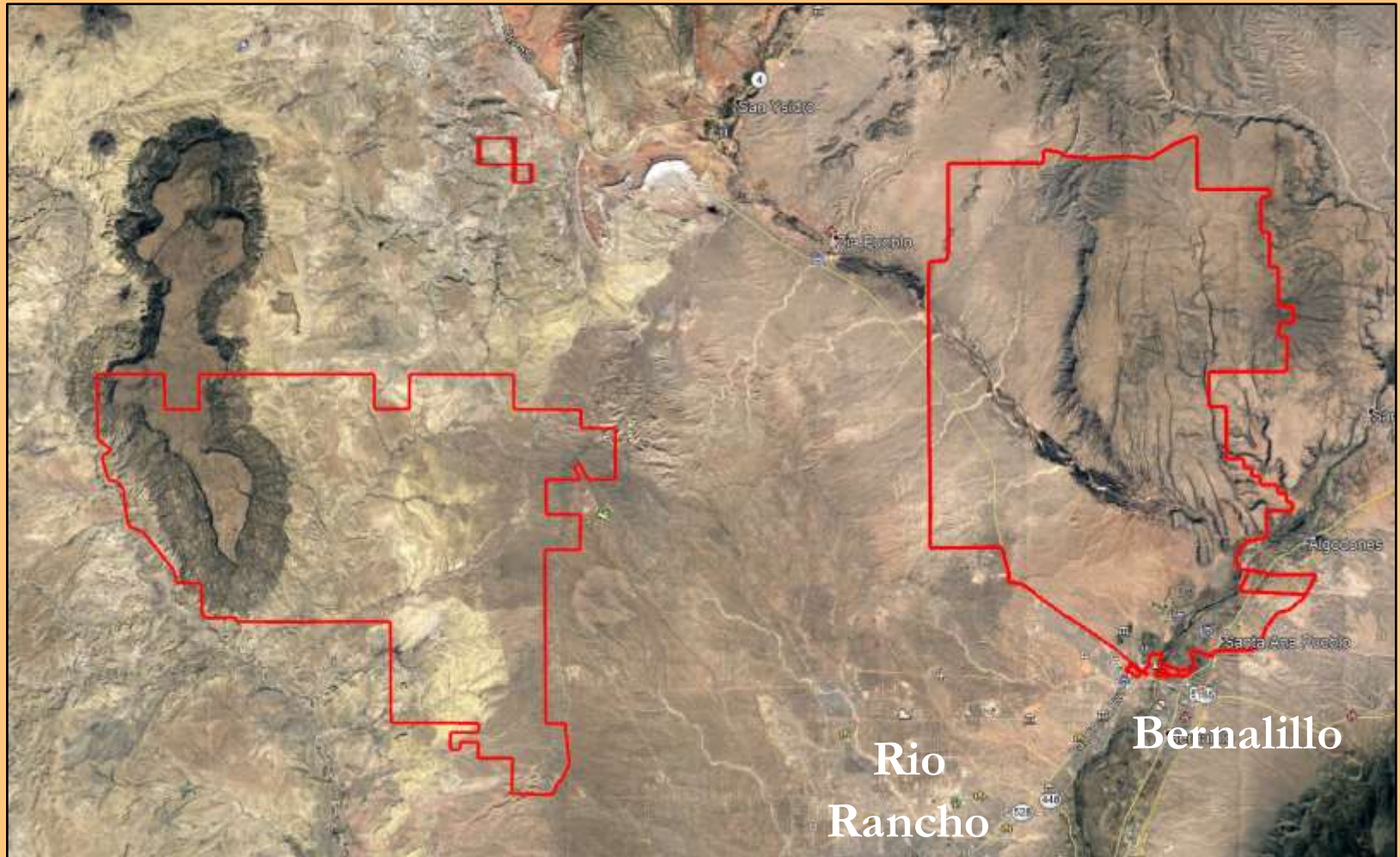


- Water Rights
- Water Quality
- Air Quality
- Formerly Used Defense Sites





# Santa Ana's Current Lands



# Habitat Restoration Projects

- Juniper Savannah Restoration Project
- Bosque Restoration Project
  - Each project results in large amounts of wood that must be utilized in some fashion
  - Each project deals with woody debris differently in order to meet the needs of the Santa Ana community





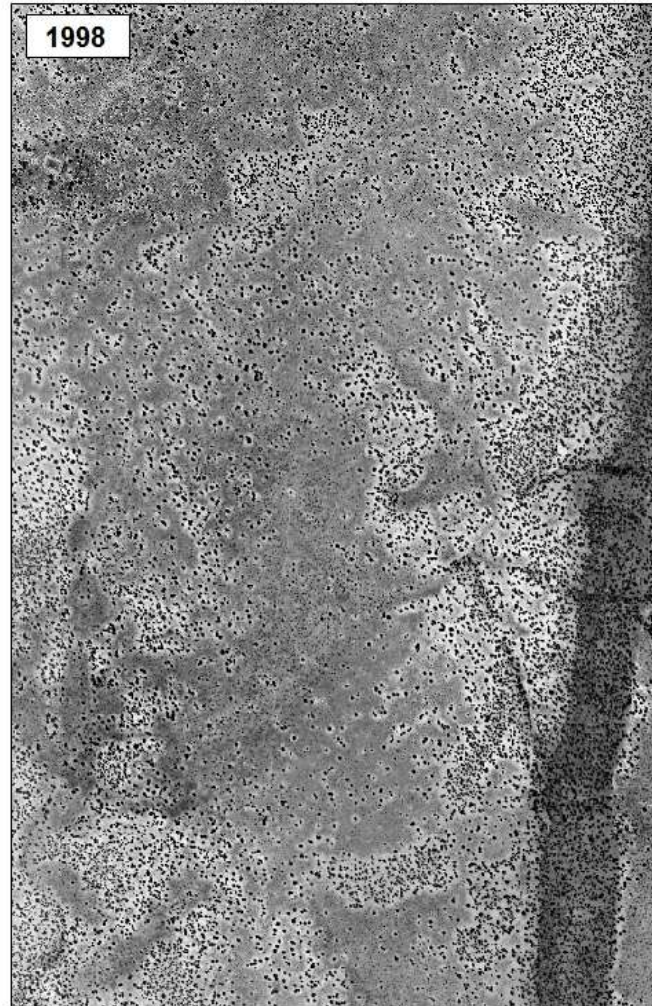
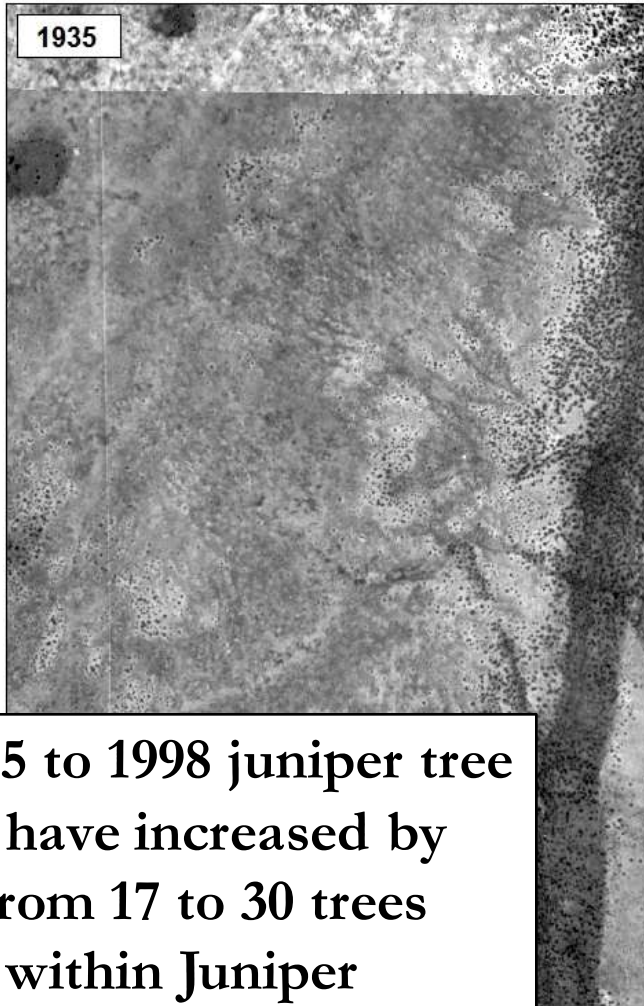
# Juniper Savannah Restoration

## Project Goals

- Restore Juniper Savannah health and structure
- Reduce erosion by reducing the amount of bare soils
- Reduce the threat of catastrophic wildfire
- Enhance wildlife habitat by increasing available forage
- Restore a natural wildfire regime to the landscape



# Juniper Savannah Restoration



From 1935 to 1998 juniper tree densities have increased by 93% (or from 17 to 30 trees per acre) within Juniper Savannah on the Pueblo





# Juniper Savannah Restoration

- Consists of manual chainsaw thinning to reduce tree density with lopping and scattering of slash to promote vegetation recruitment and provide fuel for implementation of prescribed fire
- Extracting salvageable biomass to use as fuelwood for tribal members





# Before



# After Thinning





# Burning



# After Burning

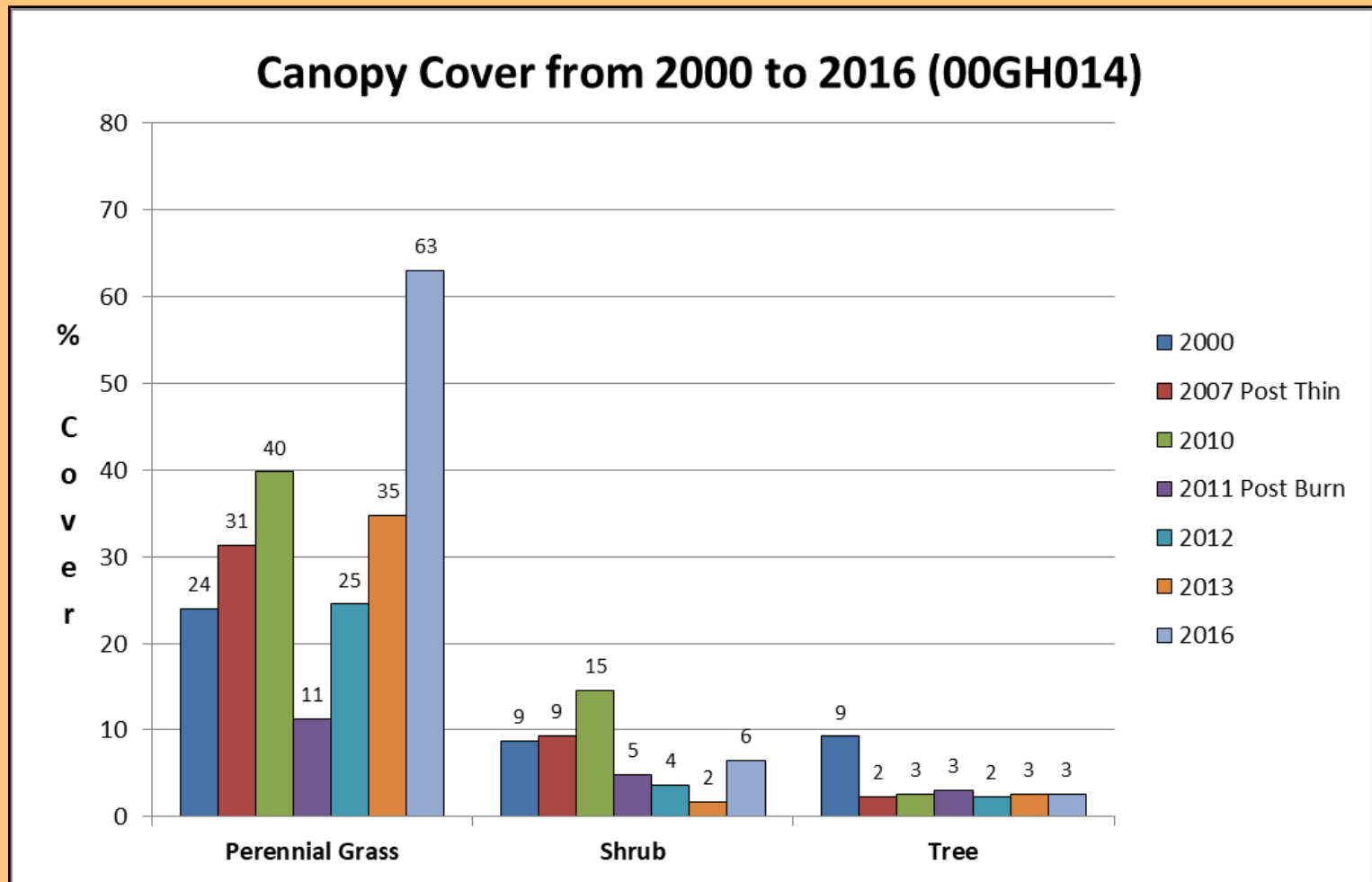




# Before

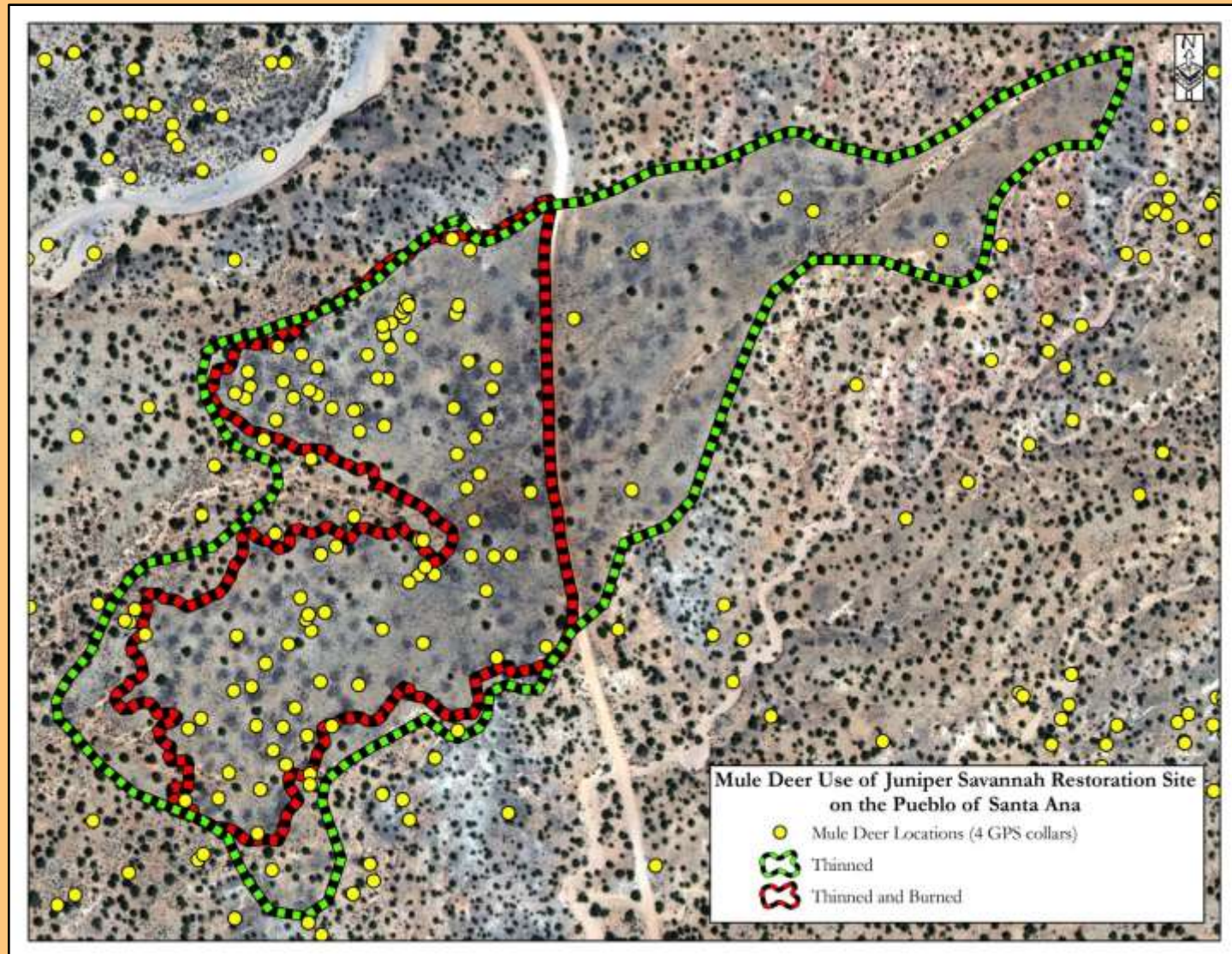


# Response





# Deer Use



# Wood Utilization

- Branches and small material scattered to hold soils in place and provide fuel for prescribed burns
- Larger material cut to manageable lengths and distributed to tribal members for use as fuel wood to heat homes and traditional ovens
- To date we have distributed 1,150 cords of wood to community members

A cord of wood is 4'x8'x4' (WxLxH). A stack of 1,150 cords would extend 4,600 feet high or a little over the height of 3 Empire State Buildings (to the top of the antenna)





# Bosque Restoration Project

- Goal is to return the bosque to a more natural system
- Provide habitats needed for species that are either native to the area, culturally important to the Pueblo, or listed as T&E
- With the support of the Bureau of Reclamation, Bureau of Indian Affairs, Corps of Engineers, and the New Mexico Environment Department we have treated over 1,500 acres of bosque



# Bosque Restoration Project

- Initial removal of invasive and non-native species was done with a masticator which left the wood chips on the soil
- Wood chips have been slow to break down and have suppressed shrubs and grasses post treatment



- Moved to more labor intensive methods using chainsaws and a chipper in order to avoid this layer of chips in the bosque
- Led to large amounts of wood chips that we had to find a way to dispose of





# Other Contributing Factors

- Manure and animal bedding generated by the Stables at Tamaya which is part of the Hyatt Regency Tamaya Resort & Spa
- Green waste that is disposed of in the Pueblo's transfer station



# Compost Planning and Support

- 2012 - Began to explore composting as an option in
- 2016 - Worked with students from Worcester Polytechnic Institute to develop a composting plan and with the help of Soilutions, ABCWUA, Sandoval County, and the New Mexico Recycling Coalition began implementing the project
- NMED RAID grant allowed purchase of a compost turner





# Implementation



# Use and Sale of Produced Compost

- Compost produced as part of this project is either used by the Pueblo or sold through the Pueblo's Native Plants Nursery
- Pueblo uses include use by farmers, tribal businesses, and in restoration plantings
- We are also studying the potential benefits of applying compost to rangelands





# Future Program Expansion

- Potential to expand program to include food waste from the Pueblo's business entities such as the Santa Ana Star Casino and Hotel and Hyatt Regency Tamaya Resort & Spa
- Considering expanding to include the incorporation of biosolids from our waste water treatment plant into the program
- Pruned material from the vineyard



# Summary

- Two large habitat restoration projects that are generating large amounts of woody debris
- Each project deals with this wood in different ways
- The Juniper Savannah Restoration Project salvages useable wood for use by Santa Ana residents as fuelwood
- The Bosque Restoration Project combines wood chips with other materials to create compost for use on the Pueblo or sale through the Santa Ana Native Plants Nursery and Santa Ana Garden Center
- Both projects are ongoing and we anticipate them continuing indefinitely
- Creating a product that can have a beneficial use on the Pueblo or a product that can potentially offset some of the costs incurred in producing it was the best solution for Santa Ana





# Thank You!

- None of these projects would be possible without the assistance of the many federal, state, and local agencies we work with and who provide the financial support that makes this all possible
- The Pueblo's traditional leaders, Governors, and Tribal Council have provided consistent direction, approval, and financial support that allows the DNR to pursue these grant opportunities and to meet the match requirements
- The Santa Ana businesses and their boards whose revenues support not only the DNR but all the Pueblo's government agencies, programs, and administration
- The people of Santa Ana whose appreciation for what we do gives us the motivation we need to continue this work



# Contact Info

Director

Alan Hatch

505.771.6771 or [alan.hatch@santaana-nsn.gov](mailto:alan.hatch@santaana-nsn.gov)

Environmental Program Manager

Maxine Paul

505.771.6461 or [maxine.paul@santaana-nsn.gov](mailto:maxine.paul@santaana-nsn.gov)



Follow us on Facebook at

[www.facebook.com/SantaAnaDNR](https://www.facebook.com/SantaAnaDNR)

