

Four Corners potato (*solanum jamesii*)



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**NATURAL HISTORY
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Red Butte Garden
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**UTAH
DINÉ BIKÉYAH**

Utah Diné bikéyah's mission is to:

“Preserve & protect the cultural & natural resources of ancestral Native American lands to benefit & bring healing to people & the Earth.”



Existing and proposed energy infrastructure and resources

| | | | |
|---|---|--|--|
| <ul style="list-style-type: none"> Uranium Past Producers Mineral Locations CNR/B Mines Permitted Uranium Mines Power Plants Tar Sands Uranium Mills Oil / Gas Wells Oil Gas Pipelines_LGS | <ul style="list-style-type: none"> Coal & Pool Seams Oil Gas Fields ONR Oil Gas Units Oil Shale Deposits (1988) URRZ Phase 1 Transmission Lines URRZ Potential Energy Corridor Areas URRZ Phase 1 Wind Zones URRZ Phase 1 Solar Zones | <ul style="list-style-type: none"> Uranium potential High Moderate Low | <ul style="list-style-type: none"> Outcrop with coal seams Oil Fields Deeply buried strata - possibly coal bearing Gas field Probability of impregnated rock High probability - oil impregnated rock Poison Deposits (1988) |
|---|---|--|--|

Utah DNR habitat value
 Habitat value for individual species

| |
|-------------------|
| Substantial value |
| Critical value |

Utah DNR crucial habitats composite
 Shows composite of crucial habitats (number of species)

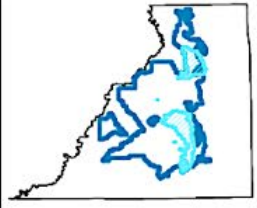
| |
|--|
| Critical habitat for 1 species |
| Critical habitat for 4 or more species |

Number of Times Each Area Was Identified During Navajo Interviews

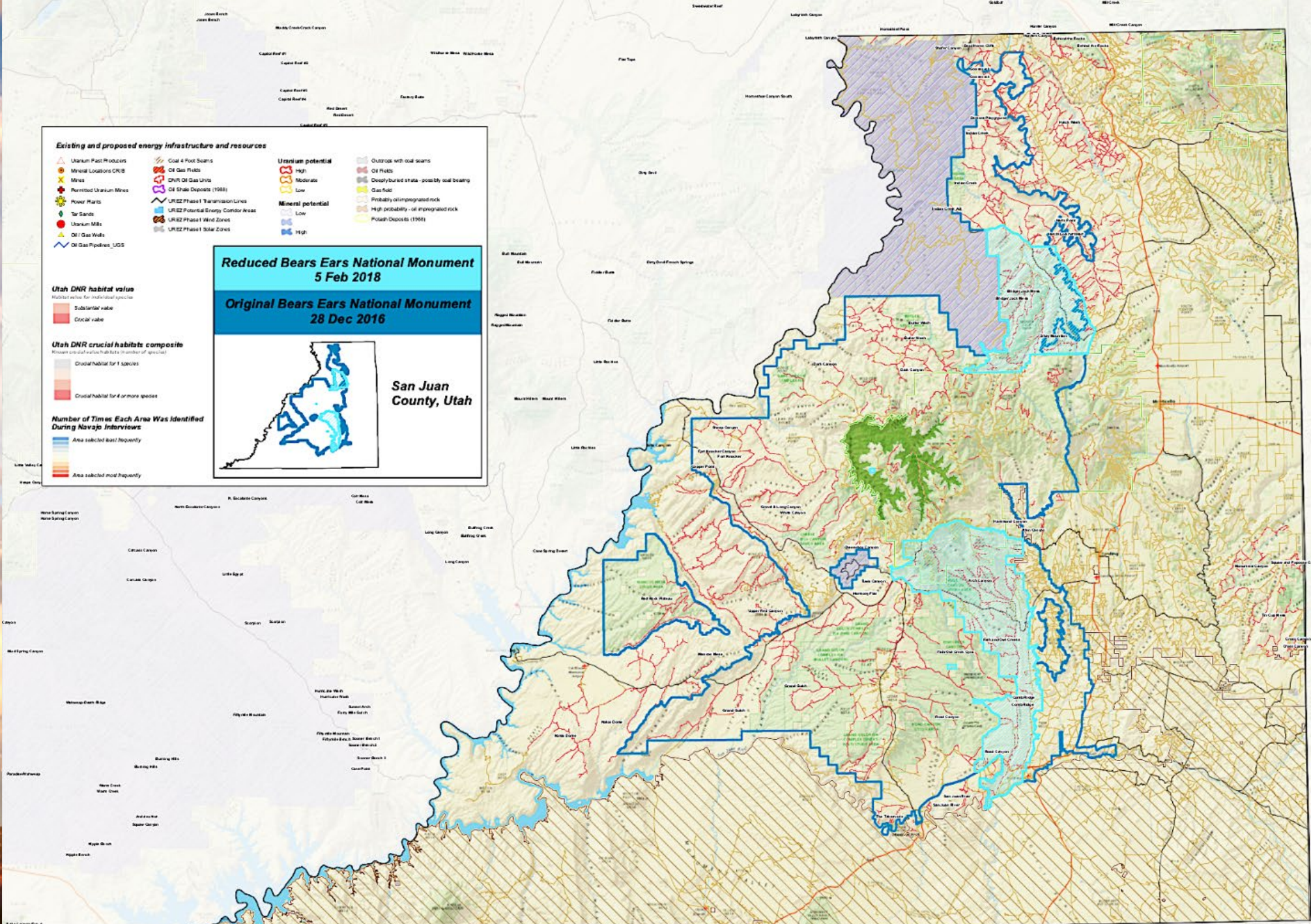
| |
|--------------------------------|
| Area selected least frequently |
| Area selected most frequently |

**Reduced Bears Ears National Monument
5 Feb 2018**

**Original Bears Ears National Monument
28 Dec 2016**



**San Juan
County,
Utah**



**UTAH
DINÉ BIKÉYAH**

Bears ears national monument proclamation:

“TEK... is, itself, a resource to be protected & used in understanding & managing this landscape sustainably for generations to come.”

- Barack Obama
12/28/2016

Bears Ears Cultural Living Landscape



Model Example: Four Corners potato

Ancestral Puebloans utilized various cooking & processing techniques:

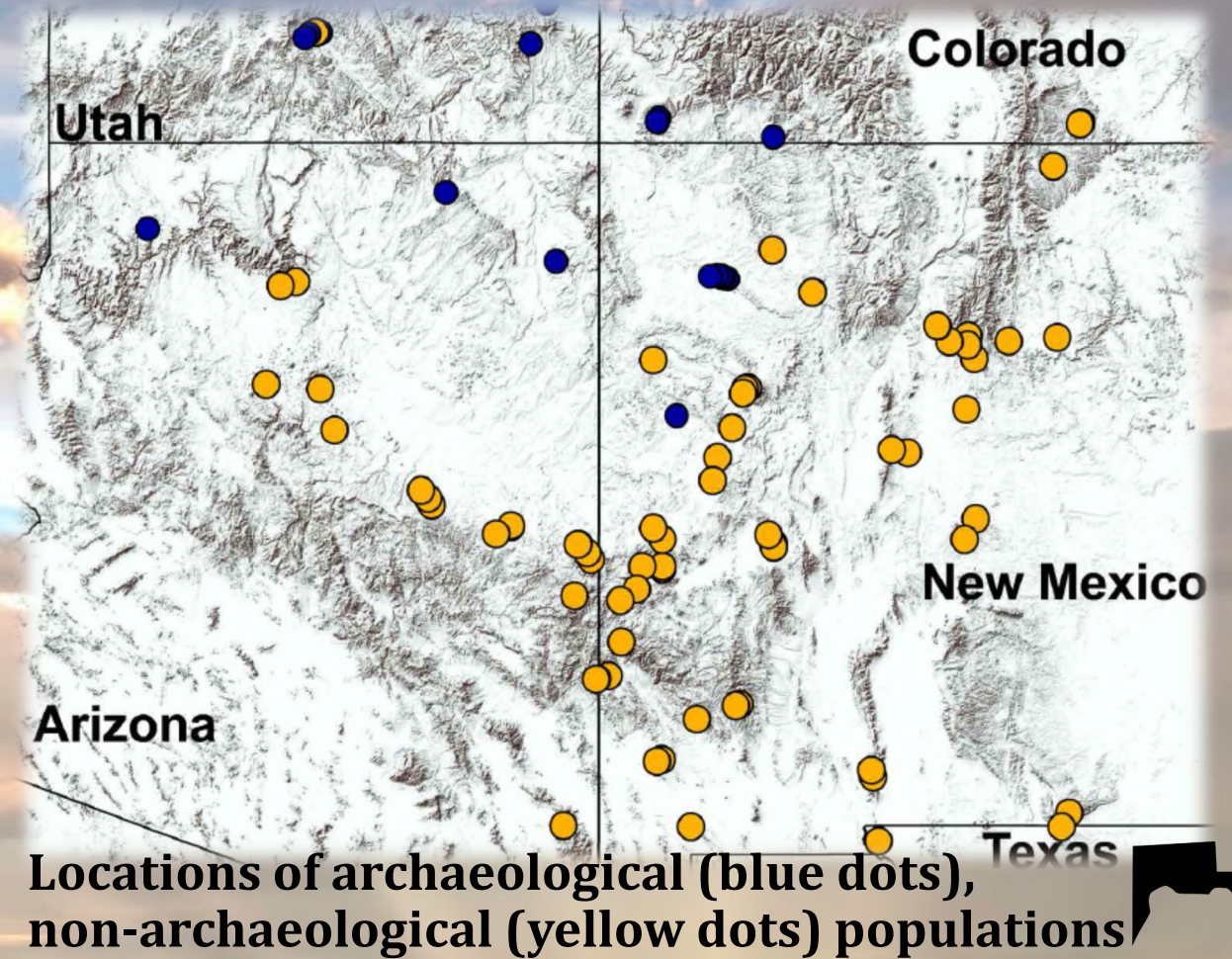
- Boiling potatoes
- Grinding → flour or yeast
- Mixing potatoes w/ clay



Four Corners potato (*Solanum Jamesii*)

Ancestral Puebloans traveled long distances to:

- Transport
- Trade
- Steward these tubers for the millennia



North creek shelter, Escalante valley UT

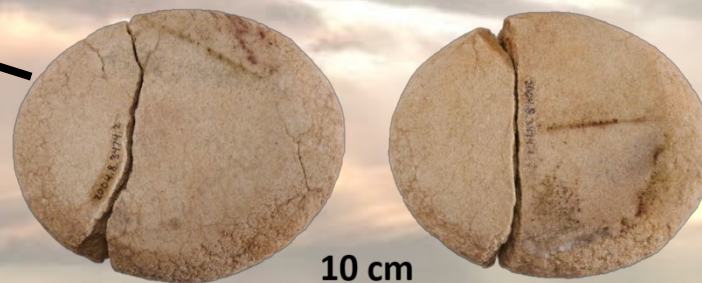


Early research:
2004-2008
Byu archaeologist
documented a
variety of dishes
dating back 11,000
years ago

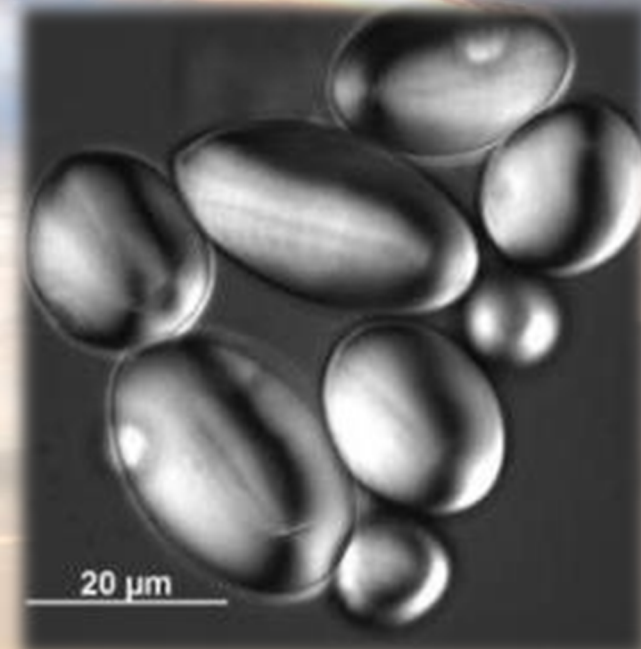
Four corners potato (*solanum jamesii*)



North Creek Shelter, Colorado Plateau



Photos: BYU researchers



Archaeological starch grains of *S. jamesii* from 11,000 year old metate at North Creek Shelter.



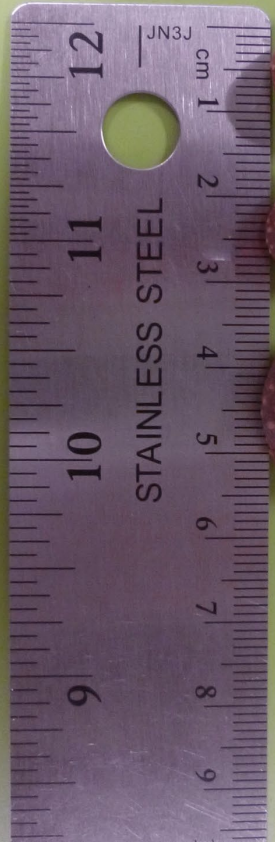
Four Corners potato at bears ears



Green house vs wild



New stem from a single eye



"Eyes" are growing points

Growing *solanum jamesii* from tubers



Each tuber with one stem
Reaching for light

Many roots produced



Photos: UofU



Propagation:
each sprouted tuber in a separate pot





Stem starts to make
new leaves, stems,
Tubers (underground)
and flowers

Some stems will grow
underground and
Each will make a
tuber





One plant can produce 200-500 new tubers after 6 months in the greenhouse



Harvesting potatoes



Tasting The Four Corners Potato



Nutrition content comparison to modern potatoes

- Based on dry weight, not tuber size. So the comparison is exact.
- 2x the protein, zinc & manganese
- 3x the calcium & iron
- we will be conducting more tests, including vitamins.



The Four Corners Potato (*Solanum jamesii*):

- Support richness of culturally significant plant species warrant special mgt regime
- Minimize damage from visitation, livestock grazing, & invasive species
- Restore plant populations



Potato Cultivation Partners: Developing the four corners potato for market



Tribes benefit:

- Culturally
- Spiritually
- Nutritionally
- Economically

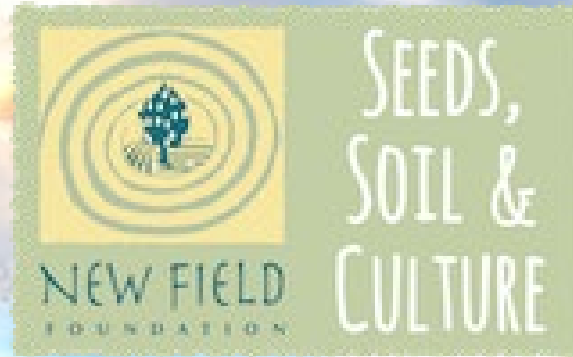
The Four Corners Potato (*Solanum jamesii*):

Potato revitalization:

- Honor
- Celebrate
- Educate
- Grow the potato



Thank You!



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