"Generational Thinking, Mindful Action" Resilience, Stewardship, and Governance at the Blue Lake Rancheria

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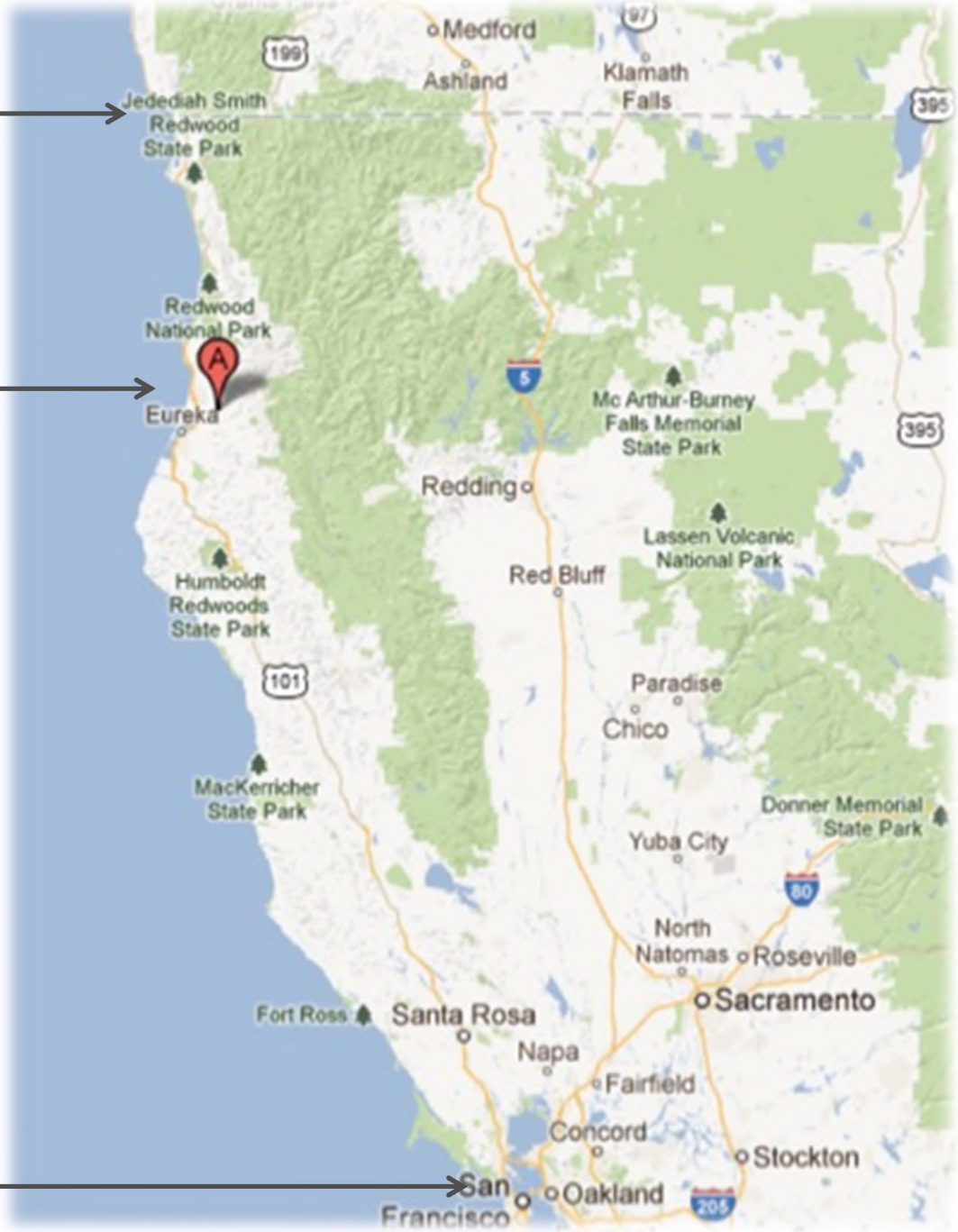
Oregon / California Border

Blue Lake Rancheria

San Francisco



Blue Lake Rancheria, California

- Federally Recognized (1908) Tribal Government
  - Organized under a constitution and tribal laws
  - 15 Government Departments - Fire | Police | Utility | Environment
  - Economic Enterprises | 400+ Employees
  - 100 Acres of Trust Land Spanning the Mad River
- Local, Regional, State, National Resilience Work
  - Federal - U.S. DOE ICEIWG | QER | BOEM CA TF | Climate Resilience Toolkit
  - California - ICARP TAC | AB 617 CG | 2018 *Safeguarding CA* | CA 4th Climate Assessment | SB 350 Disadvantaged Communities AG | IEPR
- Resilience Recognition
  - 2018 "Project of the Year DER Integration" *PowerGrid Int'l*
  - 2017 "Whole Community Preparedness" FEMA
  - 2015-16 "Climate Action Champion" White House and DOE

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Decarbonized Resilience

- "Lifeline sector" approach
  - Energy, water, food, transportation, and communication/IT
- Energy lifeline sector projects
  - Community microgrid
    - Solar PV + battery storage; centralized control system
    - Operates in grid-connected and islanded modes
    - Powers campus of critical infrastructure; American Red Cross shelter
  - Facility microgrid
    - Solar PV + battery storage; advanced building controls
    - Fuel station/convenience store
    - Replicable, low-carbon 'resilience package'
- Energy supports other lifeline sectors
  - Water – new 'smart' water grid
  - Food – onsite storage, preparation, and production
  - Transportation – EV charging, biodiesel manufacturing, public transit
  - Communications/IT – broadband, VPNs

Government Investment Rationale

- Improve economy
  - "Economy-enabling investments"
  - Lower and stabilize costs; New jobs and capacity
  - Continuity of operations – gov't; enterprises
  - Develop new 'decarbonized' marketplace
    - Pair climate mitigation + adaptation in decision-making
    - Leads to new technologies, products, and services
- Improve tribal members' health
  - Reduce air and water pollution
- Improve community and regional resilience
- Reduce climate impacts and GHG emissions
  - Achieve zero net GHG emissions by 2030
  - Seven generations:

Health Concerns – Avoid Maladaptation

- Air pollution is “a crisis”
  - 6th largest cause of death globally (WHO)
  - General public is becoming educated on the severity
- Critical to reduce fine particulate matter (PM 2.5) for health and climate co-benefits
  - PM2.5 causes ~9,000 deaths annually in CA (CARB)
- Be very careful defining “renewable” and “clean”
  - Solar is zero emissions
  - Biomass power has heavy emissions profile, requires plant-by-plant analysis
- Do not undervalue health impacts of bioresource use emissions in the short and long term

BLR Bioresource Experience

- Good
  - Biodiesel (tribe)
  - Waste to Wisdom BRDI Project (region)

- ~~Bad~~ Proven Ineffective
  - Biomass gasification at facility scale
  - Economically infeasible
    - Parasitic loads
    - Fuel sorting expense
    - Emissions controls
    - Syngas composition

- Ugly
  - In the emissions plume of, and downstream from, a chronically non-compliant 11MW biomass plant

Photo Credit: M. Perry

Policy & Research Actions

- Regional and state policy
  - Structure bioresource policy for co-benefits
    - Ensure bioresource uses do not worsen air quality
      - Avoid maladaptation and “toxic hot spots”
    - Enhanced enforcement and controls (AB 617)
    - Regulate PM 2.5 in all cases – no grandfather status
  - Move “beyond the burn” for electricity
    - Economics cannot scale; perpetual subsidies
    - Severe health hazards in emissions fallout plumes
    - Carbon lifecycle calculations are complex and often inaccurate

Policy & Research Actions

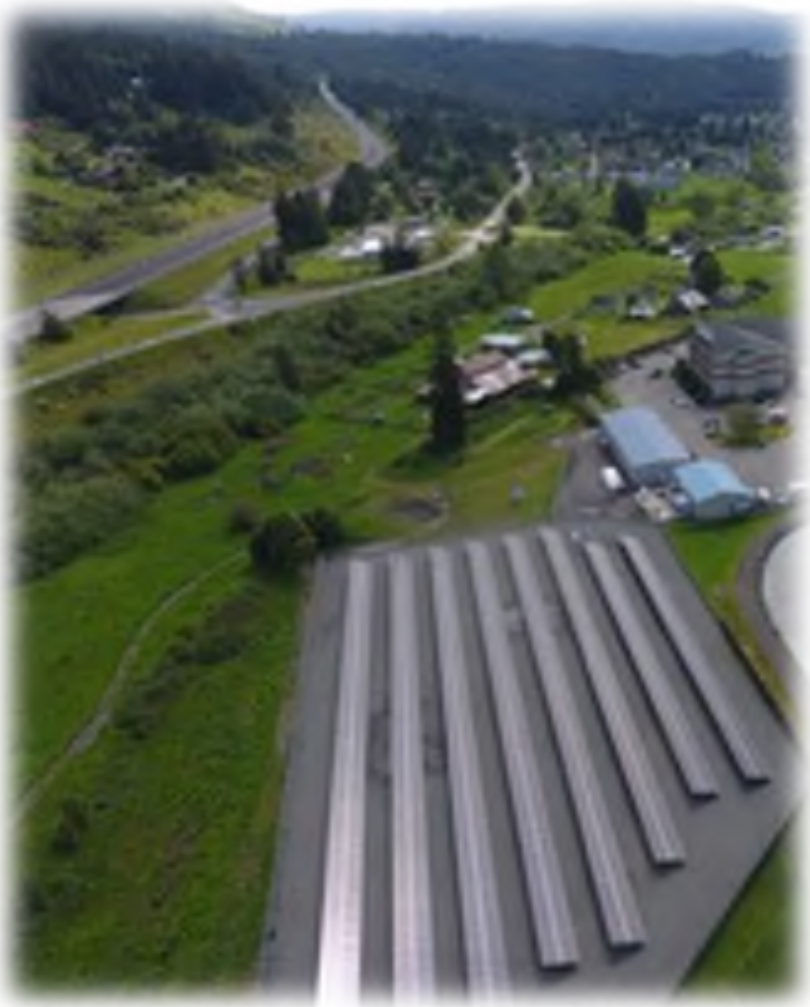
- Fund bioproduct research, development, and deployment
- Support bioproduct cases using full range of feedstocks
- Fund larger scale bioproduct applications and market facilitation
  - "Demand-pull" research
  - Biochar – early promise, bring in from the fringe
  - Activated charcoal
  - USDA Albany – torrefied biomass to displace plastics
  - Chemical applications – cellulose, lignin, etc.

Policy & Research Actions

- Apply life cycle carbon accounting
  - E.g., CA low carbon fuel standards
- Apply "full life-cycle cost accounting"
  - See Executive Order B-30-15
- Identify most-effective bioresource uses
  - Prove progress toward air quality improvements and GHG reduction goals
  - "Carbon neutrality" must be proven, not assumed
  - ~11 years to avoid worst impacts of climate change (IPCC 2018 update)
  - Accurate progress is essential

Policy & Research Actions

- Tribal policy
  - All the above, plus
  - Class 1 Air Designation for tribal airshed
  - ‘Treatment as a state’ for water resources
  - Achieve greater input on permitting (Title V permits); more control over pollution
  - Work with partners on bioproduct RD&D
    - Example: “Toma Resilience Campus” (open 2021)
      - Workforce development training center
      - Business incubator with light manufacturing spaces
      - K-grey decarbonized resilience innovation focus



Microgrid solar array at Blue Lake Rancheria. Credit: BLR

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