

# Quinault Indian Nation Renewable Energy Plan



# Beginnings

- 1990's: Original biomass study
- 2002: QIN Renewable Energy Team formed
- 2004: DOE feasibility study starts (two-year)
- 2006: DOE Final Report
- 2006: USDA commercial study begins

# QIN Goals

- Energy self-sufficiency
- Create an energy system consistent with:
  - Opportunity
  - Environmental sustainability
  - Cultural values
- Generate employment and business opportunities



# Deliverables

- Conduct a feasibility study
- Generate a renewable energy development plan



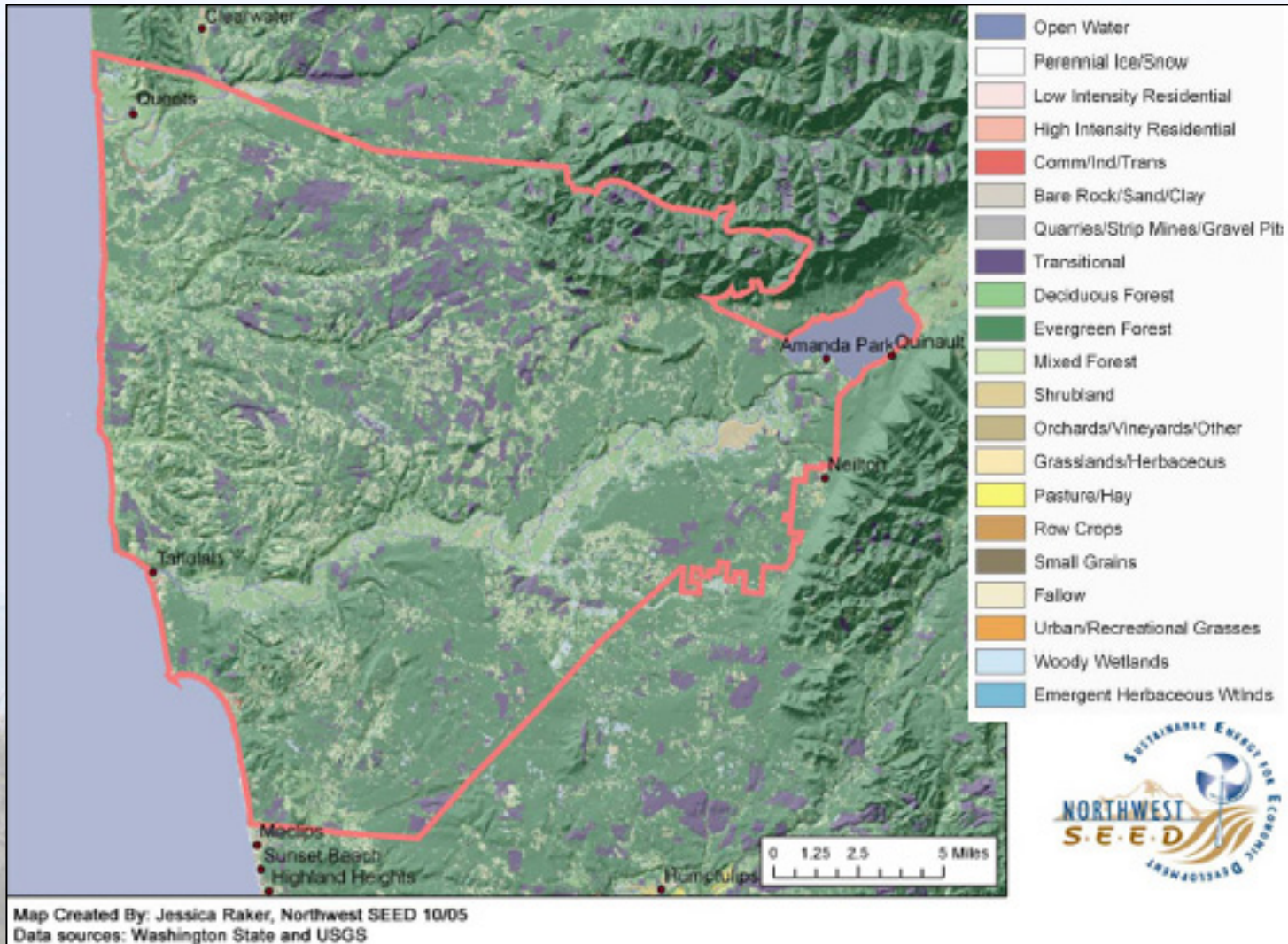
# The Quinault Indian Nation

- People and History
- Geography
- Resources – fish, trees, wind, and water





# Resources of the Nation



# What we have studied: the Quinault Indian Reservation, Olympic Coast, and Olympic Region



## Needs

### Assessment:

- Needs
- Opportunities
- Location
- Volume/Supply
- Energy Use



# What we have studied: the QIR, Olympic Coast and Region

- Conservation
- Wind
- Waves
- Water
- Solar
- Wood Biomass
- Solid Waste





# What we have studied: the Quinault Indian Reservation, Olympic Coast, and Olympic Region

- Technologies:
- Turbines
- Pyrolysis
- Gasification
- Bioconversions



# What we have studied: the Quinault Indian Reservation, Olympic Coast, and Olympic Region

## Markets:

- Electricity
- Fuels
- By-products





# What we have studied: the Quinault Indian Reservation, Olympic Coast, and Olympic Region

## Economics:

- Costs
- Income
- Jobs
- Financing



# Other Considerations

- Align with QIN's Strategic and Management Plans
- Align with QIN's cultural beliefs





# What we discovered



- Conservation – Weatherization and Refrigerator Replacement
- We've already implemented programs

# What we discovered

- Wood Biomass –  
Wood to electricity,  
heat, oil, and  
charcoal





# Possible Partners

- Possible partners – financing and development
  - DynaMotive
  - Crane Creek Cedar Corporation/Local Mills
  - Grays Harbor Paper
  - Emperium Renewables

# DynaMotive

- Dynamotive develops and markets BioOil fuel technology and products based on patented fast pyrolysis technologies.
- Dynamotive produces and now markets carbon-neutral liquid fuel produced from cellulosic biomass.

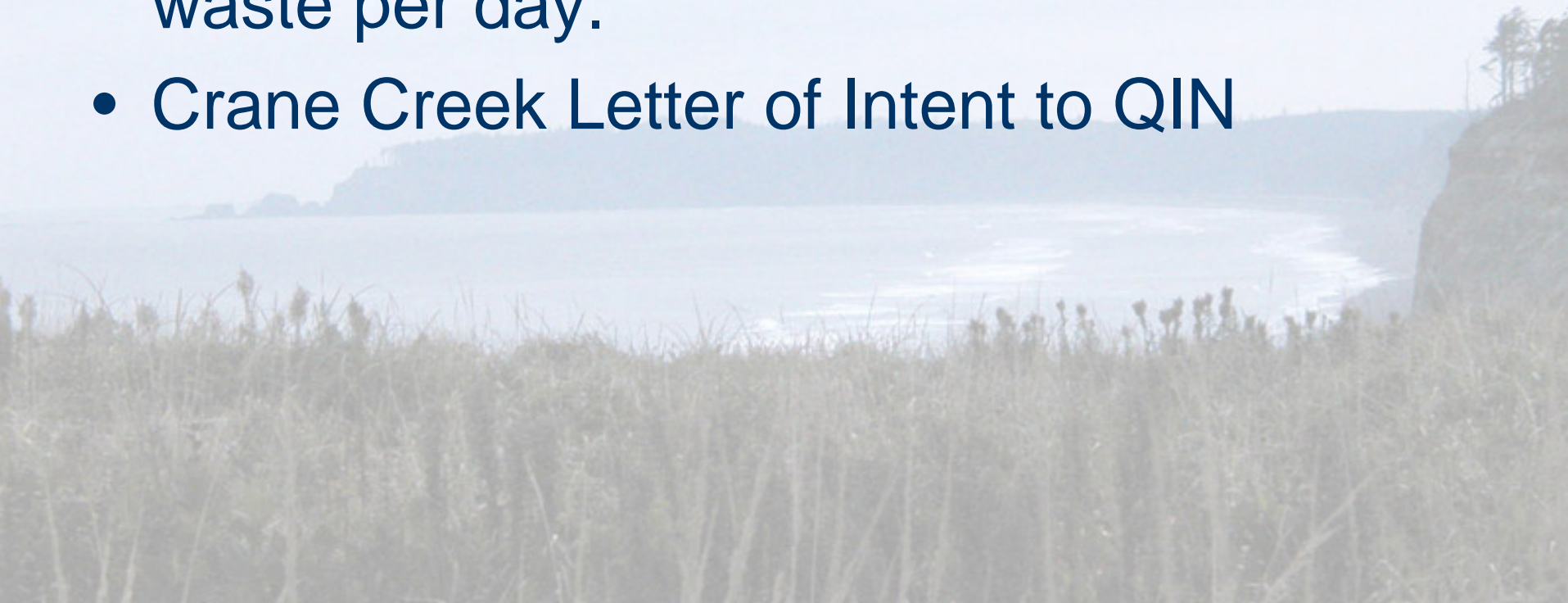


# Pyrolysis Process



# Crane Creek Cedar Corporation

- Crane Creek successfully produces hemlock and cedar fence boards, generating 70 tons of inner-wood biomass waste per day.
- Crane Creek Letter of Intent to QIN





# The Plan: Options

- Conservation – Weatherization and technology upgrades
- Production for Local Use – Small-scale wood biomass producing electricity and heat
- Commercial Development – Explore partnerships and utilize innovative technologies using wood biomass

# The Plan: Financing

- Financing – Utilize Energy Policy Act incentives and increasingly friendly green financing options.
- Utilize nonprofit for wood waste removal to increase land productivity; and convert wood waste to a renewable energy.



# The Plan: Jobs and Opportunities

Jobs will be created through:

- Commercial operation
- Nonprofit administration
- Nonprofit projects, i.e., wood waste removal from reservation lands

# The Plan: Organization

- Organization – Create a Quinault Indian Nation Community Development Corporation to implement the Renewable Energy Plan
- Decide on “for-profit” options/transition
- Explore development of a QIN Utility

# The Plan: Education and Awareness

- Education – Develop renewable energy education site in conjunction with National Park Service
- Develop a webpage on QIN's main website
- Develop opportunities for future “sustainability” leaders of QIN



# From DOE to USDA: Commercial Study

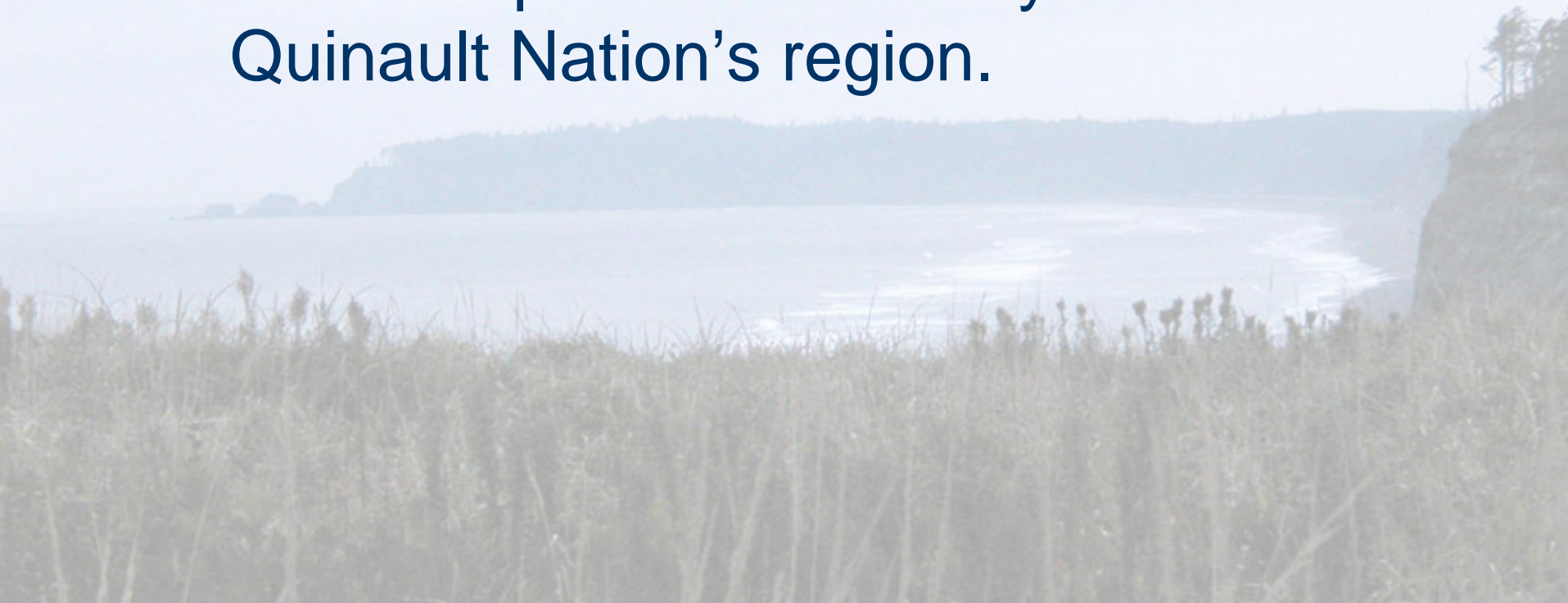
- Received a U.S.D.A. – Rural Business Enterprise Grant
- Purpose: Explore the feasibility of a commercial operation to produce bio-oil; and develop a business plan. Project ends 12/31/06
- Project is currently in progress

# USDA Presents Check to Council for Wood Waste Conversion Project



# Wood Waste Conversion Project (WWCP) Purpose:

- This project will focus on the opportunity for the development of a bio-oil and charcoal production facility in the Quinault Nation's region.





# WWCP Objectives

1. Complete a feasibility study and create an organizational plan
2. Organize an entity capable of developing a moderately sized pyrolysis facility and generate a business plan

# WWCP Objectives

3. Determine a business relationship with a viable entity like Crane Creek
4. Identify and contact public and private sources of financing. Create a fund development strategy

# Closing Remarks

- DOE study was successfully completed
- USDA study is important to future QIN commercial development
- Possibility of USDA funding for development/implementation
- QIN is poised to move forward with implementation, provided it proves to be viable for QIN



# Thank You!

The Quinault Indian  
Nation wishes to thank  
DOE for the  
opportunity to explore  
renewable energy  
options!

*Fawn R. Sharp, President*



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