RAVEN
BIOFUELS

May 2009

- THE FUTURE OF RENEWABLE FUELS -

Raven: Biorefineries of the Future – Here Now

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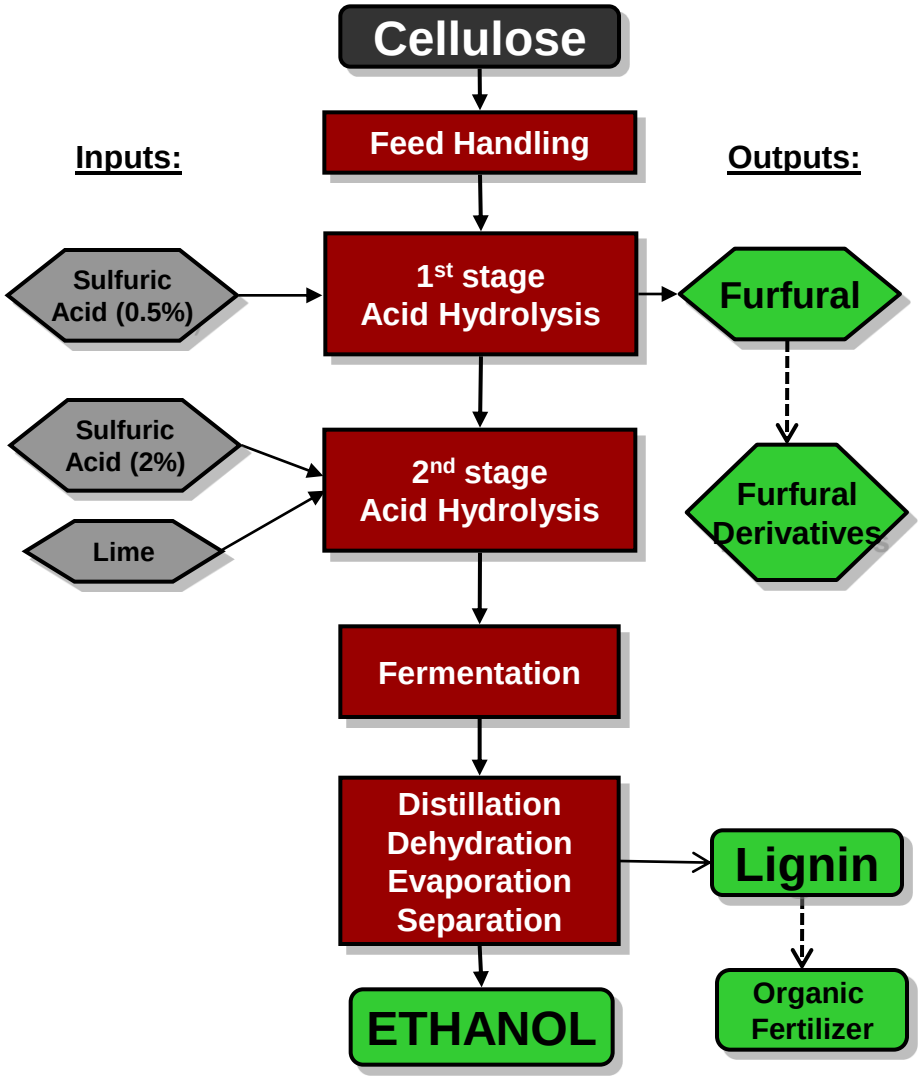
- Multi-product **cellulosic** biorefineries with **renewable focus**
  - Ethanol
  - Specialty Chemicals
  - Biofertilizers
  - High value byproducts
- Non-food source focus
- Reduced oil dependency
- Government Support and requirements
  - Loan guarantees, DOE grants, tax breaks
  - Cellulosic Ethanol Capacity Targets – 16 billion gallons annually by 2022

Raven Biofuels: A True Biorefinery

- Raven Biofuels International Corporation is a **renewable** energy company focused on building, owning and operating commercial cellulosic **biorefineries** producing **multiple products.**
- **Experienced management team** in process delivery and operations with technical depth.
- Raven has **proven technologies** that profitably transform non-food feedstocks into biofuels.
- **First plants** proposed for British Columbia and Mississippi using wood waste.
- Raven is publicly traded on the OTC BB: RVBF

Cellulosic Ethanol Technology

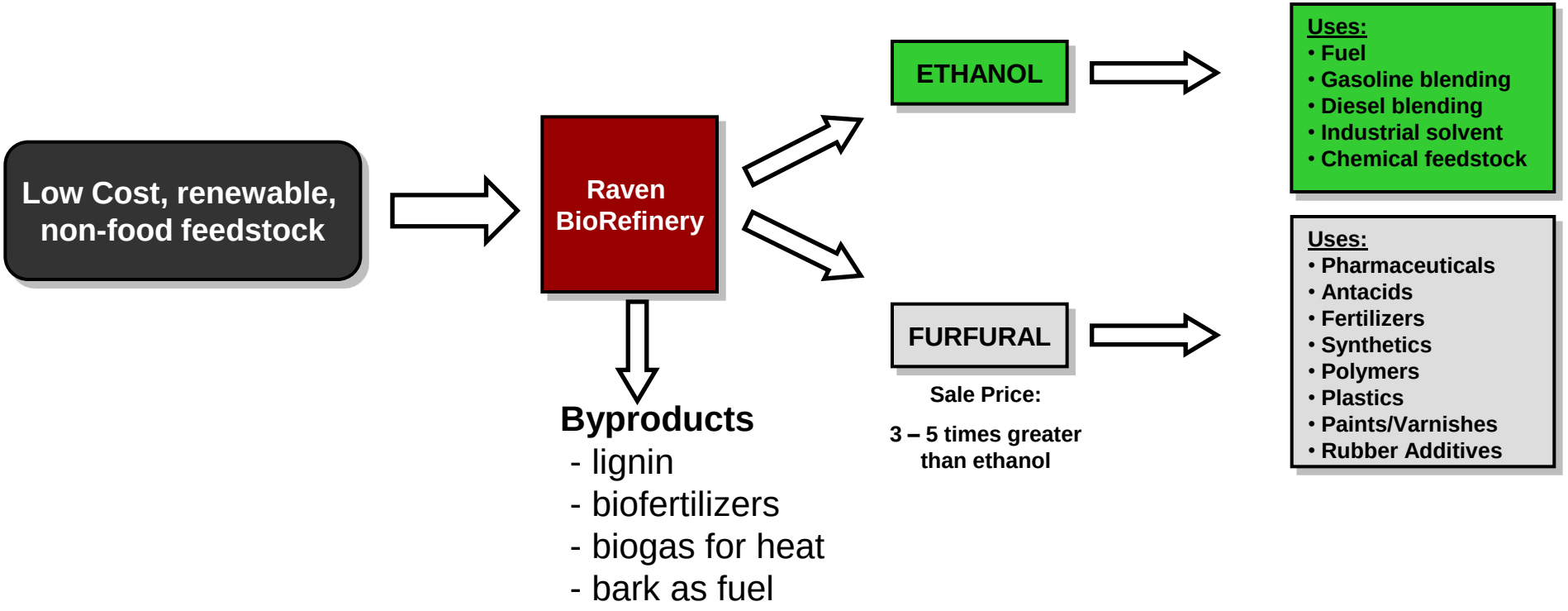
- Raven's proprietary cellulosic ethanol production is based on a **two-stage dilute acid hydrolysis process.**
- **Stage 1**: Cellulosic feedstock, such as wood chips or sugar cane bagasse, is mixed with a weak sulfuric acid solution and heated to separate xylose (C_5 sugars) from hemicellulose which are then refined into furfural.
- **Stage 2**: The remaining portion of the feed-stock is treated again with sulfuric acid to produce glucose (C_6 sugars) from cellulose which is then fermented into ethanol.
- Raven's process also utilizes the remaining lignin (high heat content residual waste) for steam generation to reduce the total costs of ethanol production.



Multiple Outputs – Raven's Biorefinery Model

- Raven produces **multiple value-added products** from a single input: E**thanol and high value chemicals,** and additional revenues from byproduct utilization.

- Multiple revenue sources from the biorefinery maximizing **revenue and profitability.**



Multiple Product Uses

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- Furfural & Furfural Derivatives
  - Expanding world-wide markets with multiple end products
  - Off-take agreements are in place
  - R&D for green diesel additive planned
- Lignin Residual Utilization
  - Pellet fuel production facilities – agreement in place
  - Utilized as fuel for plant energy requirements
  - Development of other specialty chemicals in progress
- Organic Fertilizers & Biogas Production
  - Commercial / Technical plan in place
  - Enhances biorefinery revenue and reduces environmental impact
  - Low cost plant heat sources that reduces energy demand

Biorefinery Commercial Projects

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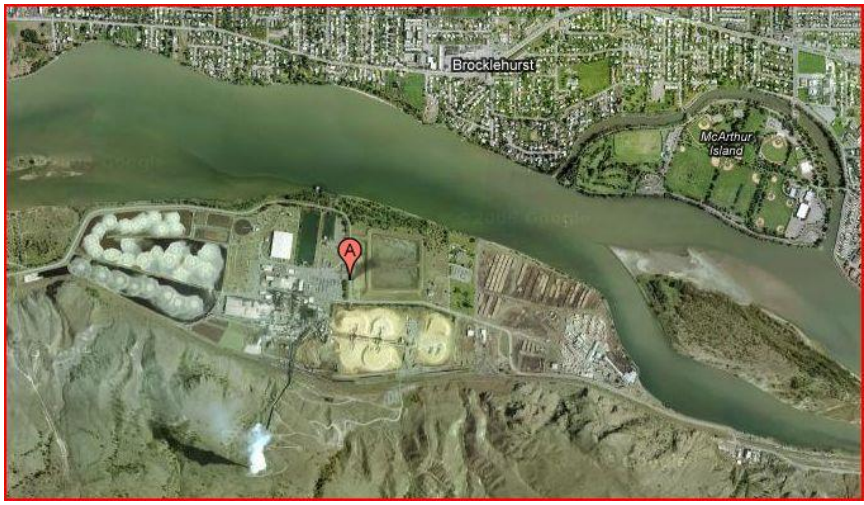
1. **British Columbia – Project Kick-Off May, 2009**
   - Feedstock: Pine Beetle Infected Pine – Millions of Tons Available
   - Location: Kamloops, British Columbia
   - Project Partner: Kamloops Indian Band
   - Owner's Engineer Selected: Sandwell (Vancouver, BC)
   - Utilities: Local Pulp & Paper Company under agreement
   - Access: Highway, rail and Thompson River
   - Projected Output: 11,000,000 Gallons per Year



Pine Kill: a Huge Problem in BC

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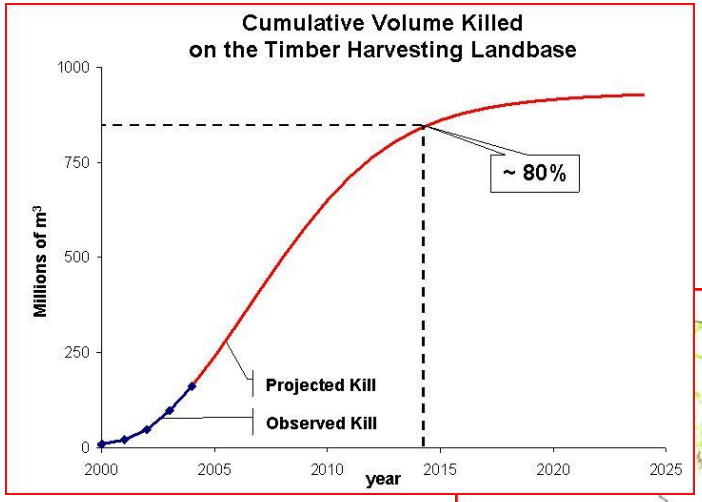

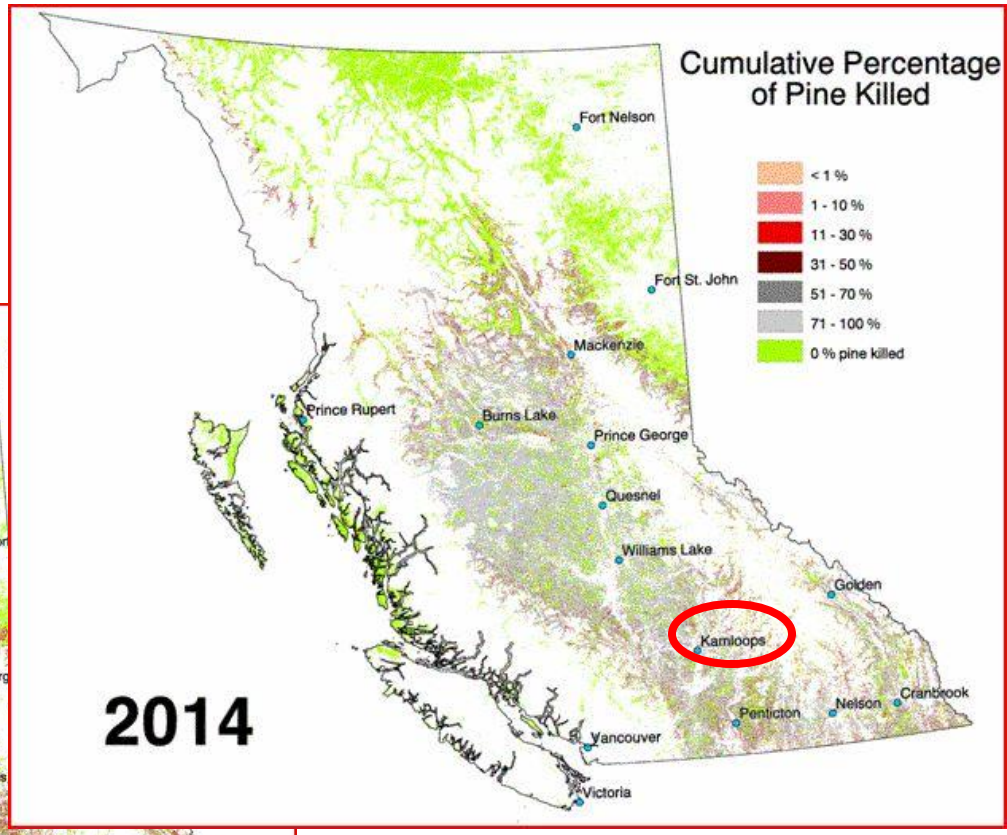

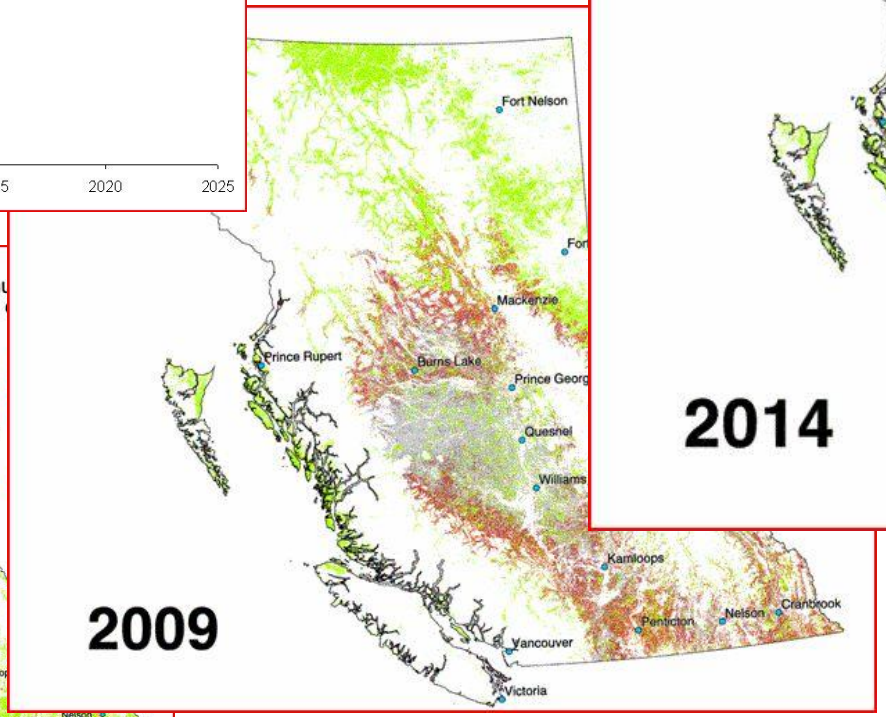

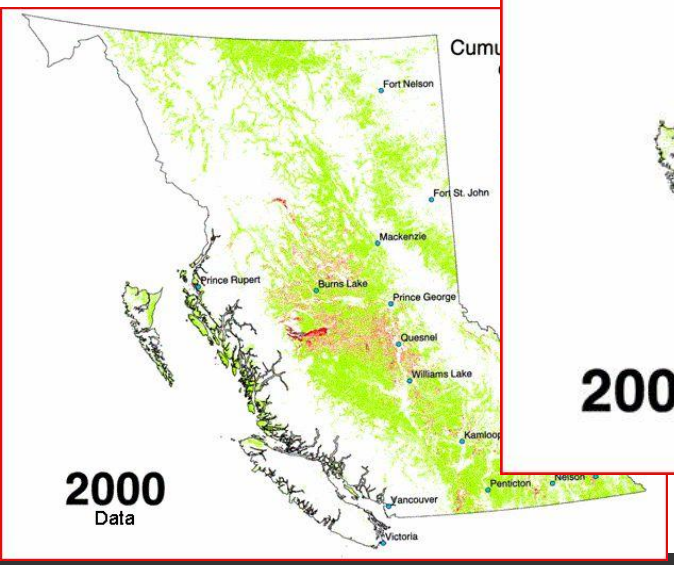

Wood can't be used for timber, pulp and paper. **They burn it!**

BC is 3.88 times the surface of the United Kingdom or more than California, Oregon and Washington states combined!

Biorefinery Commercial Projects

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2. Mississippi State - Project Kick-Off November, 2009

- Location: Ackerman, MS
  (Close proximity to furfural partner and Gulf Coast refineries)
- Feedstock: Hardwood & Softwood Chips
- Mississippi State Government Programs / Incentives
- Owner's Engineer Selected: Larson Engineering (Atlanta, GA)
- Initial Output: 11,000,000 gallons per year
- Utility supply agreement are in progress
- Byproduct utilization and revenues are defined

Ackerman, MS Biorefinery Site

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Raven: Biorefineries of the Future – Here Now

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1. **Diversified Revenues and Profits – a true biorefinery model**

2. **Projects developed and proceeding** with strong and local partners

3. Proprietary **commercially ready technology**;

4. **Limited** research and development **risk**;

5. A **strong management team** with extensive knowledge of biorefineries and operational experience

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