

# Natural Resource Land Valuation

Expert Requirements & Unique Challenges  
Presentation to Natural Resources Law Section  
Canadian Bar Association  
March 30, 2021



# Discussion Topics

- Natural resource land valuation in legal practice
- Engaging the right valuation expert
- How appraisers & foresters determine land & timber values
- Are intangibles valued?
- Common problems with natural resource land valuation
- Questions from CBABC members

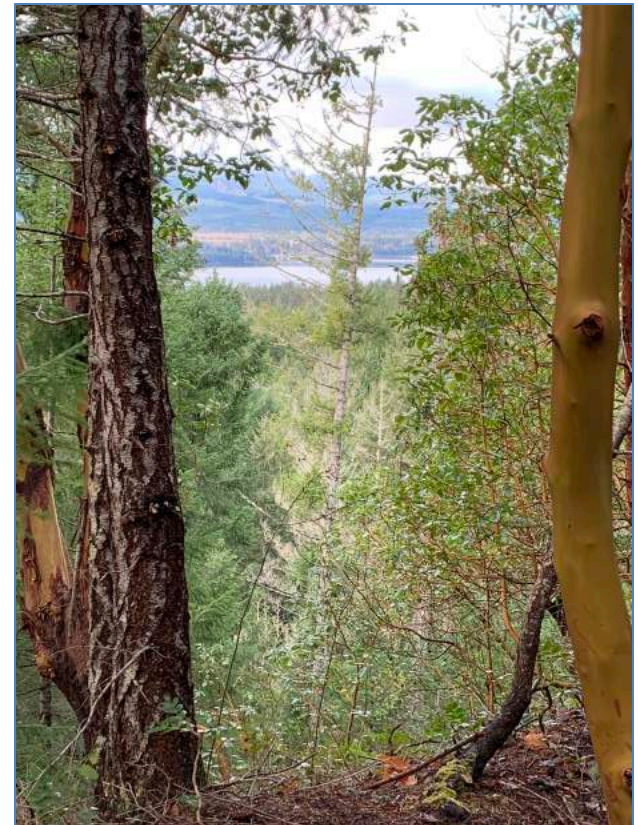


RIPARIAN AREA – NEAR CHEMAINUS

# Role of Valuation Experts

- Legal counsel may require valuations of resource lands for:
  - Litigation or Commercial Arbitration proceedings
  - Purchase options, Property Acquisitions or Sales
  - Estates
  - Corporate or partnership buy-outs or buy-ins
  - Expropriation of natural resource lands
  - Conservation Covenants & Other Ecological Gifts
- Problem is identifying the contributory value of resources:
  - Commercial timber
  - Aggregate (i.e., sand & gravel)
- Unique valuation scenarios: submerged land

ECOLOGICAL GIFT DENMAN ISLAND



# Valuation Concepts & Jargon

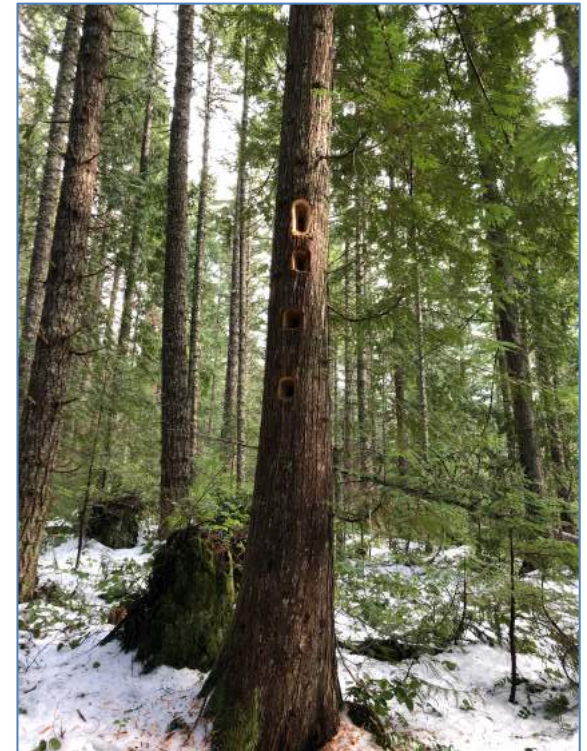
- Market Value – often determined by Property Sales Comparison
- Highest & Best Use – sets the foundation for property value
- Timber Cruise
  - Establish *operable forest land base*
  - Determine *net recoverable volume*
  - Identify *volume & area net-downs*
- Timber (Stumpage) Appraisal
  - Establishes market log prices
  - Identifies all logging costs & risks
  - The residual value is the net timber value
  - Present value adjustment for large areas



FELLER BUNCHER ON STEEP TERRAIN

# Engaging Land & Resource Valuation Experts

- Qualifying a Real Estate Appraiser – AACI Designation
  - Experience & expertise in natural resource land valuation
  - Local market knowledge & contacts
  - Experience in working with Forest Professionals
  - Can advise counsel on need for Forest Professionals & other experts
- Problem: few appraisers have this expertise
  - Appraisal Institute of Canada directory of members
  - Word of mouth
- Best if appraiser engages forester (or vice-versa) to coordinate tasks & deliver consistent reporting



CAVITY NESTERS IN DOUGLAS FIR

<https://www.aicanada.ca/need-an-appraiser/find-an-appraiser/>

# Coordination of Land & Forest Professionals

- Coordination is important since:
  - Overall property value will depend on the Highest & Best Use (HBU)
  - Retention of some forest cover may be required for land value
  - Failure to coordinate land & timber valuations may lead to over-valuation
- Appraisers/ Foresters/Others need to understand the jargon
- Appraiser's Report should cite & rely on the Forester's report\*
  - Common elements should be the description of land, size, access, etc.
- Expert's Reports must be understood by intended users
  - Problem: reports full of technical terms & acronyms
  - Problem: reports that fail to clearly communicate analysis & findings

\*And other Experts: Hydrologist, Biologist, Geotechnical & Environment Engineers, Surveyor

# Options for Estimating Timber Volumes

- Likely a Forest Professional will be required
- Option 1 Reconnaissance
  - **Pros:** Fast & Inexpensive. Online data can assist (Veg. Resource Inventory)
  - **Cons:** Accuracy limited, unseen & unknown variables related to tree health, logging cost, and log grades – may be wide margin of error
  - Best suited for small properties with 10 to 50 acres of timber
- Option 2 Timber Cruise (multi-day process)
  - **Pros:** Detailed – Larger, informed buyers & sellers may require a Cruise
  - **Cons:** Still need timber valuation, time consuming, expensive, very technical
  - Best suited for larger acreages with > 100 acres of timber



CASCADIAN FOREST CONSULTANTS – MERRITT  
LOWER NICOLA INDIAN BAND

# Factors affecting Land & Forest Value

## Land Value

- Access, services, land use controls, pattern of use & demand determine *Highest & Best Use*

## Forest Value

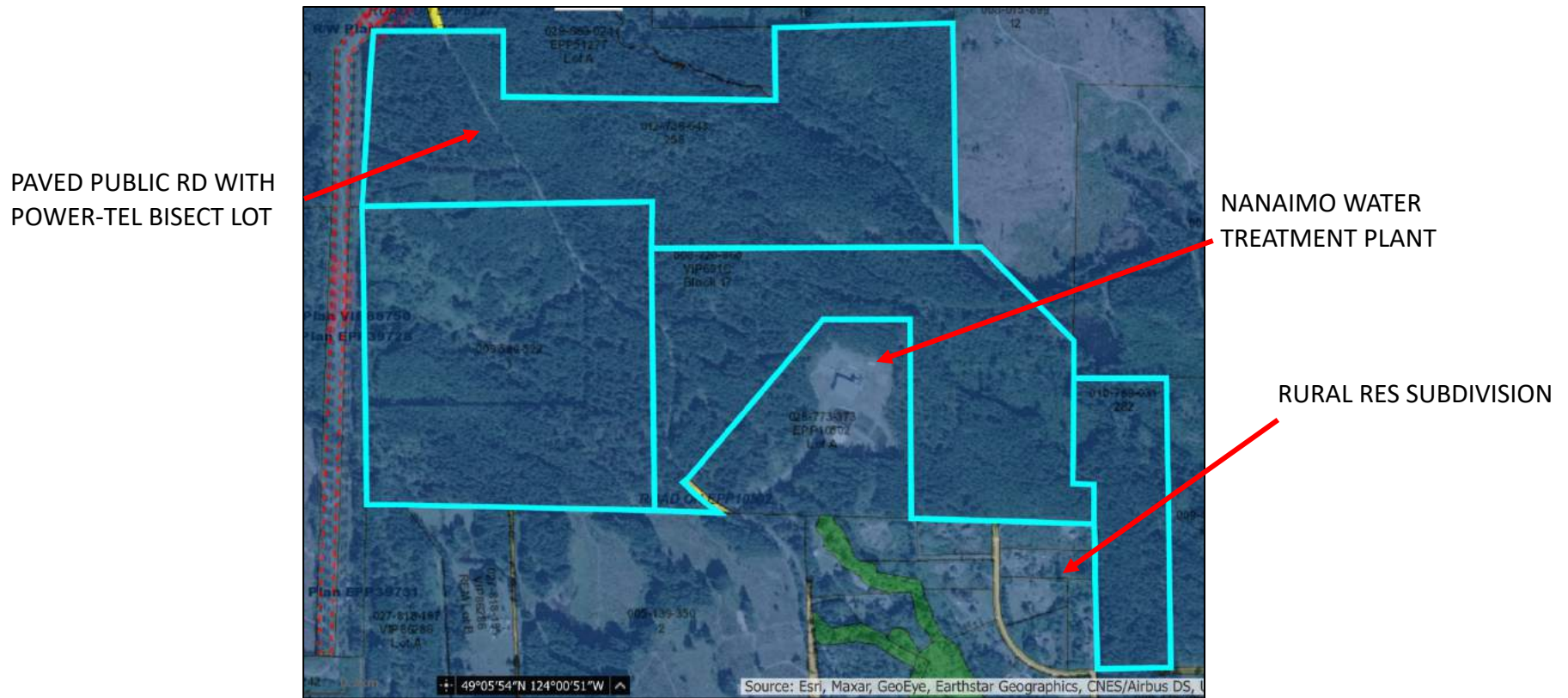
- *Operable Area* for timber harvesting
- Tree species – e. g., Cedar is valuable
- Stand Characteristics & Volume per ha
- Terrain limitations => harvesting methods
- Log quality and log prices at time of sale
- Road building, Logging & Trucking costs
- Off site costs: e.g., road access agreements



DRONE IMAGE – CROWN LANDS WEST OF MT BENSON

# Highest & Best Use - Land & Forest Value

- Access, Services & Pattern of Land Use are indicators of *Highest & Best Use & Market Value*



LTSA IMAGE – PORTFOLIO OF CROWN LANDS SOUTHWEST OF NANAIMO

# Operable Timber Area

First confirm Legal access – roads to site may still be required

1. Total area of the property – small areas not typically economic to log
2. Less non-productive areas (wetlands, lakes, rock bluffs, etc.)
3. Less low productivity areas (i.e., poor growing sites)
4. Less Netdowns for sensitive habitats, stream protection & heritage sites

Result is classification of forest land base: *operable & non-operable*



NON-OPERABLE SENSITIVE HABITAT - METCHOSIN

# Timber Volume Metrics

- Merchantable timber: part of a tree that has is recovered during logging
- Merchantable timber volumes may exceed 1,200 m<sup>3</sup>/ha on the BC Coast
- Forests are not homogeneous & are composed of *Tree Stands*
- *Stands* defined by a similar species mix, similar heights and age classes
- Stands may be characterized as *mature* or *immature* based on age
- Total merchantable volume will depend on:
  - *Stand Density* or no. of trees per ha
  - Age, Height & diameter of the trees in each Stand
  - The % of the trees in each Stand that can be harvested and sold into the market at a price that will cover the logging costs: *Utilization %*



SELF LOADING TRUCK – PRIVATE MANAGED FOREST

# Market Conditions

Market conditions will affect log prices.

For example:

- Coast v. Interior:
  - Pine sawlogs on the BC Coast \$55/m<sup>3</sup> to \$65/m<sup>3</sup>
  - Pine sawlogs in the BC Interior average \$93/m<sup>3</sup>
- Annual Trends:
  - Cedar 'J' now at \$242.05/m<sup>3</sup>.
  - In 2012 the same log was listed at \$99.27/m<sup>3</sup>.

Market conditions at sale date & location dictate log value



TOLKO WILLIAMS LAKE LOG YARD

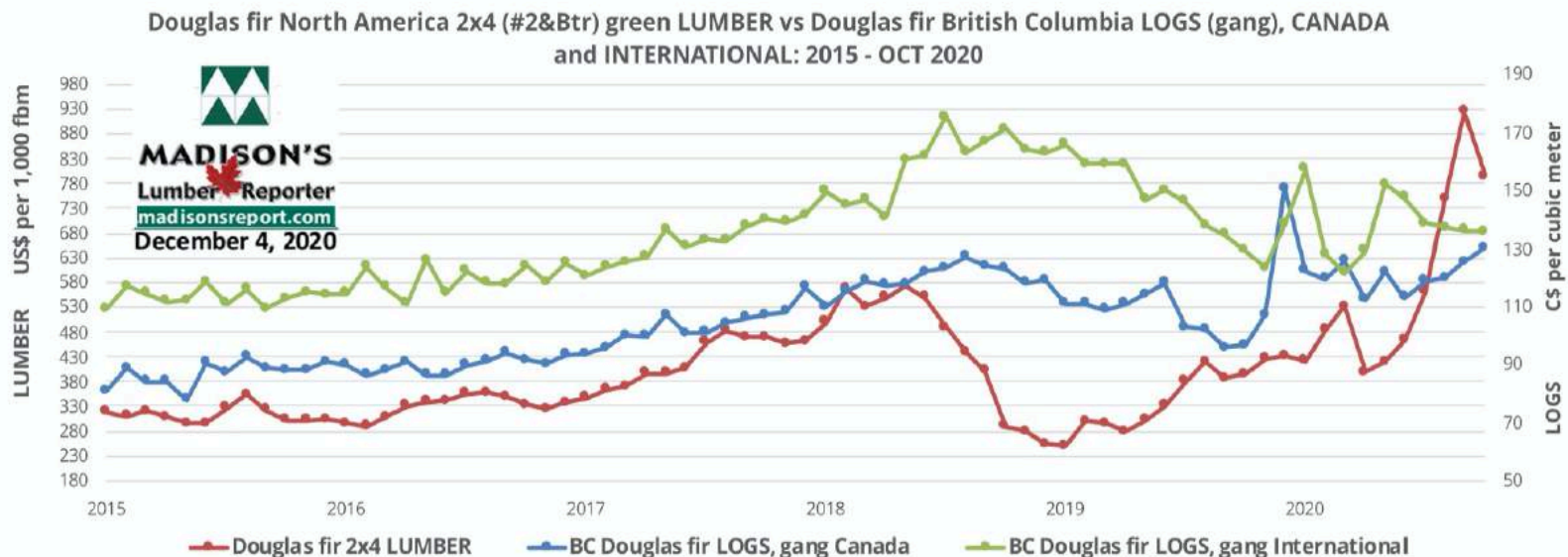
# Tree Species & Forest Value

Log prices vary significantly by Tree Species & Log Grade

Log Prices – Vancouver Log Market Reporting

- AMV - Nov 2020 Grade 'J' Western Red Cedar \$242.05/m<sup>3</sup>
- AMV – Nov 2020 Grade 'J' Western Hemlock \$75.02/m<sup>3</sup>

## NORTH AMERICA 2x4 LUMBER VS BC COAST LOG PRICES 2015 - 2020



SOURCE: Madison's Lumber Reporter

# Log Quality

- Log prices vary greatly within a species  
Cedar log grade 'D' recent price \$540.53/m<sup>3</sup>  
Cedar log grade 'Y' recent price (reported) as \$21.57/m<sup>3</sup>
- Insects & Disease impact quality
- Log size and quality affects value

LOG HAND SCALING – NORTH ISLAND



DOUGLAS FIR LAMINATED ROOT ROT



# Crown Grants Prior to 1906

- Crown Grant is the original transfer of land from the Crown Provincial – typically includes timber but excludes minerals.
- Generally, land Crown Granted prior to March 12, 1906 means exported timber has provincial “export taxes” applied.
- Was the Crown Grant prior to March 12, 1906 and is the timber “Exportable” under federal rules? *Ruling may be required.*
- Export taxes on provincial timber vary by species, log grade and current log prices by formula. Export taxes can vary from \$1/m<sup>3</sup> to over \$30/m<sup>3</sup>.
- Typically a premium value for exportable logs: \$20 to \$40+ per m<sup>3</sup>.

VIEW OF PORT NEVILLE – JOHNSTONE STRAIT



# Logging Costs (Stump to Dump)

- *Stump to Dump* means all phases of logging:
  - Falling, Bucking & Skidding to Landing
  - Loading & Delivery to Point of Sale
  - Sorting & Scaling
- *Stump to Dump cost* will depend on logging methods required and economies of scale with applying the optimal equipment.
- For example:
  - Ground or conventional equipment ~\$16-25/m<sup>3</sup>.
  - Grapple Yarding will be > \$25/m<sup>3</sup>
  - Helicopter logging is ~\$100/m<sup>3</sup>.
  - Trucking costs to the point of sale are can be an additional \$5 to \$25/m<sup>3</sup>.

# Logging and Delivery Cost

- *Stump to Dump* means all phases of logging:
  - Falling, Bucking & Skidding to Landing
  - Loading & Delivery to Point of Sale
  - Sorting & Scaling
- Logging, Towing, Barging & Trucking costs depend on
  - Location
  - Access-terrain-tree volumes
  - Contractor availability & expertise.
- Coastal logging costs can vary from + \$30/m<sup>3</sup> to over \$100/m<sup>3</sup>



GRAPPLE YARDER WORKING NEAR TAHSIS



PACHEEDAAHT ANDERSON LOG SORT AT JORDAN RIVER



SKIDDER LOGGING (CONVENTIONAL) MISSION TREE FARM

# Logging Conditions (Roads)

- Logging roads with culverts & bridges will likely be required
- Construction costs depend on terrain & drainage requirements
- Sample BC Coast road costs: \$60,247/km to \$135,852/km (rock conditions)
- Appraisal question: Are logging roads an improvement to the land (i.e., driveway to house site) or a write off against the log value?

BC TIMBER SALES ROAD ON CROWN LAND  
NEAR LADYSMITH



# Common Valuation Issues

- Failure to complete a Market Analysis & flawed HBU
- Not confirming Legal Access
- Not adjusting comparable sales for contribution of timber
  - Need to understand whether forest cover is material
  - Need to understand motivation of seller & buyer
- Not testing outcome of timber valuation (e.g., BC Timber Sales)
- Not determining if logs are exportable
- Not accounting for retention of forest for riparian & other values

# Value of Intangibles

- Intangible Values for natural resource lands include:
  - Aesthetic values: viewsapes & nature appreciation
  - Cultural heritage (i.e., First Nations area of cultural importance)
  - Unique wildlife, ecological (i.e., old growth) & watershed values
- Values of intangibles are subjective – no database of information
- Some intangibles are captured in overall Market value of land
- Appraisers & Foresters are not trained to value intangibles as separate assets
- Expert opinions are restricted to tangible land & resource values



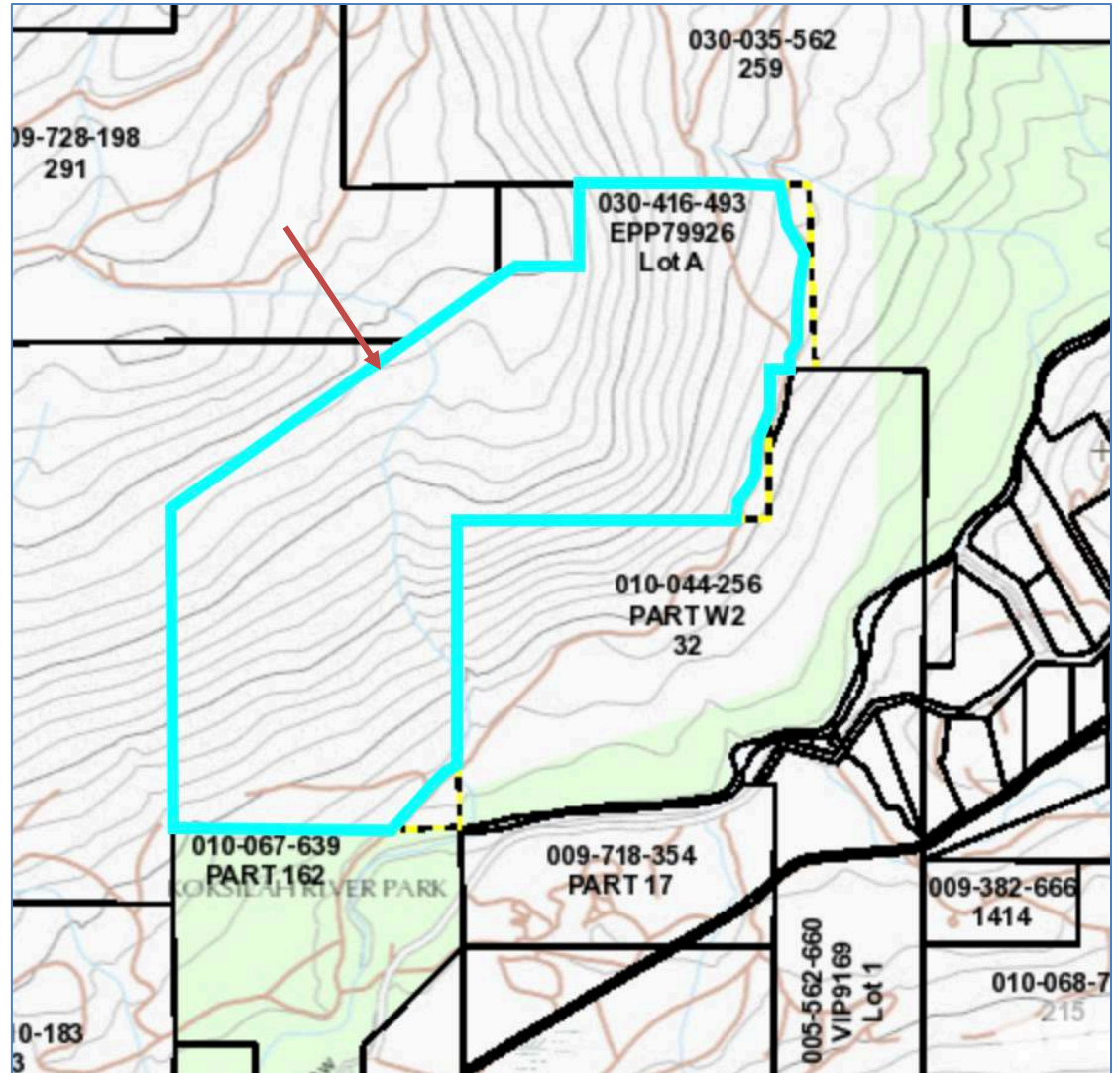
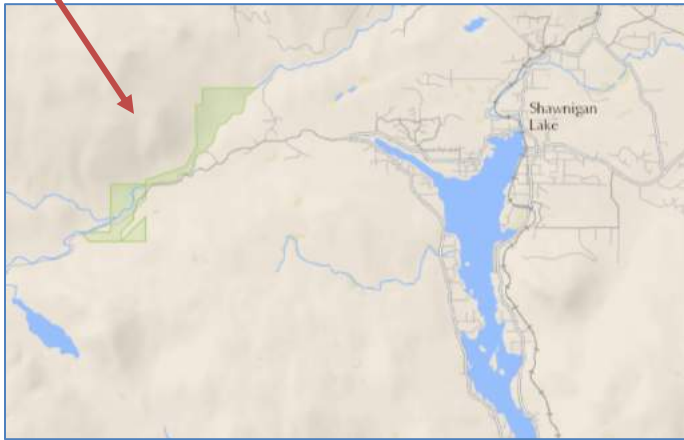
RECREATION TRAIL IN DUNSMUIR LODGE FOREST



ISLAND TIMBERLANDS PROPERTY - BEACH AT BARKLEY SOUND

# Natural Resource Lands Valuation Case Study

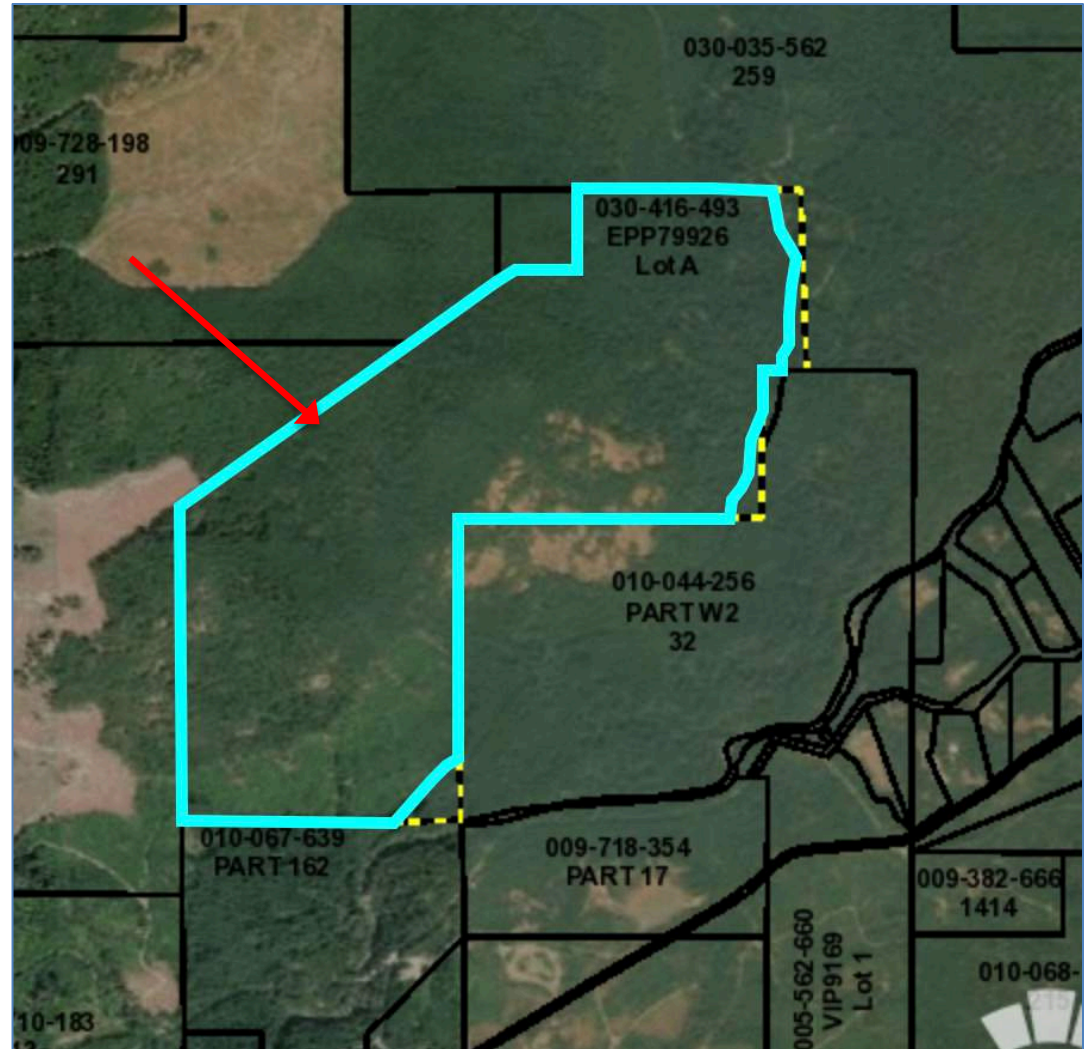
## Eagle Heights – Shawnigan Lake



# Natural Resource Lands Valuation Case Study

## Eagle Heights – Shawnigan Lake

- Acquired March 1, 2018
- Seller was Island Timberlands GP
- Buyer was BC Parks: Expansion of Kosilah River Provincial Park
- Sale Price: \$7,150,000
  - Timber Value: \$5,255,000
  - Land Value: \$1,895,000



# Natural Resource Lands Valuation Case Study

## Eagle Heights – Shawnigan Lake

### Negotiations Process

- BC Parks confirmed natural values / pressure from local community
- BC Parks & IT jointly commissioned Timber Cruise
- IT assigned value to planted areas (often not the case)
- BC Parks engaged independent Appraiser & Forestry advisors
- Appraiser & Forester worked collaboratively to id volume retention for:
  - Aesthetic values...consistent with property sales in area
  - Riparian values consistent with Private Forest Land Owner commitments
  - Species at Risk
  - Visual Quality

# Summary – Natural Resource Land Value

Natural Resources Land Value will depend on:

- Highest & Best Use of the property (including trees)
- The volumes, species, size and quality of the trees
- The costs of access, timber harvesting, hauling & clean up
- Assumed retention of timber volume

Considerations for Legal Counsel

- Engaging experts who understand the local market
- Land & forest valuation experts need to coordinate efforts
- Land value and timber value is not  $1 + 1 = 2$
- Timber value often exceeds land value in Lower Coast & Vancouver Island

PARICIPANT QUESTIONS