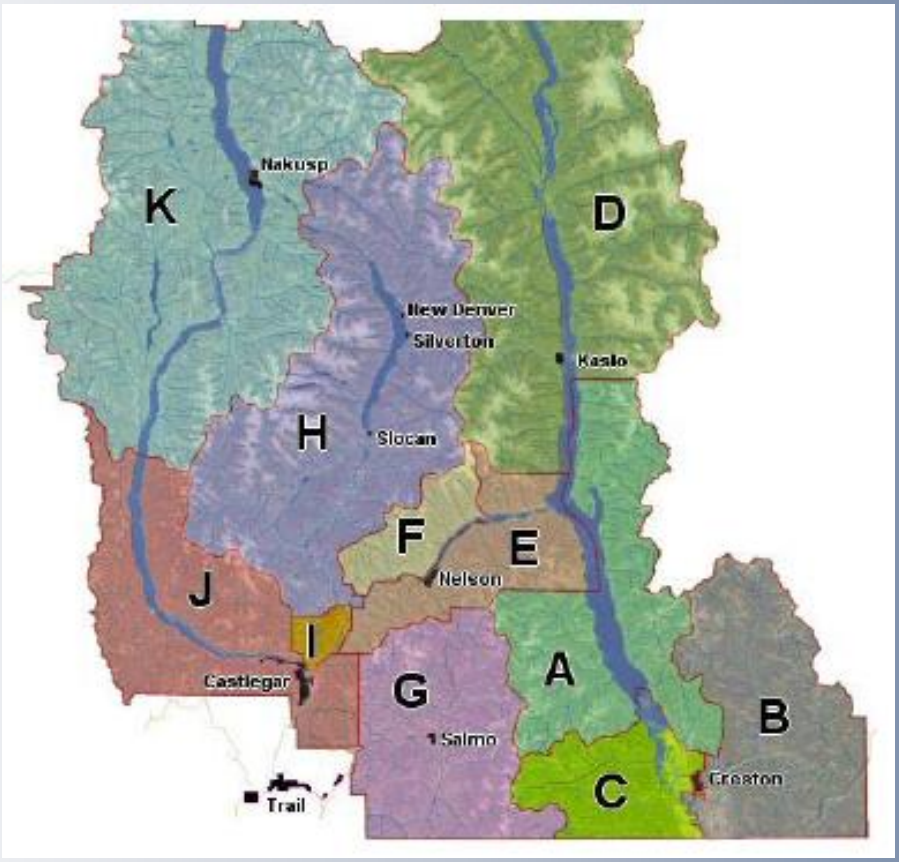
Floodplain Regulation



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Why Floodplain Regulation?

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RDCK Floodplain Bylaw

- Floodplain Management Bylaw No 2080, 2009
  - Requires minimum elevations and setbacks for floodproofing
  - Identifies Alluvial Fan hazard areas
- Applies to all persons who construct on land designated as 'Floodplain'
- Building permit triggers floodplain bylaw requirements
- Floodplain bylaw/maps form the foundation upon which many land use decisions are made about how and where communities grow, floodplain requirements are incorporated into:
  - Building Bylaws
  - Subdivision Approvals (MOTI)
  - Official Community Plan
  - Zoning Bylaws
  - Emergency Planning

History

- From the early 1980s to 1993, Flood Construction Levels and Setbacks from the natural water line were provided as provincial guidelines
- 1993, first RDCK Floodplain Bylaw adopted which specifies Flood Construction Levels (FCL) and Setback requirements
- 2003 and 2004, legislative changes granted local governments the authority to manage land use in flood hazard areas:
  - the removal of BC Ministry of Environment approval for subdivisions and floodplain bylaws within flood hazard areas
  - granting of greater authority to local governments with the provison that provincial guidelines be taken into consideration
- Almost 10 years since the province passed responsibilities to RDCK

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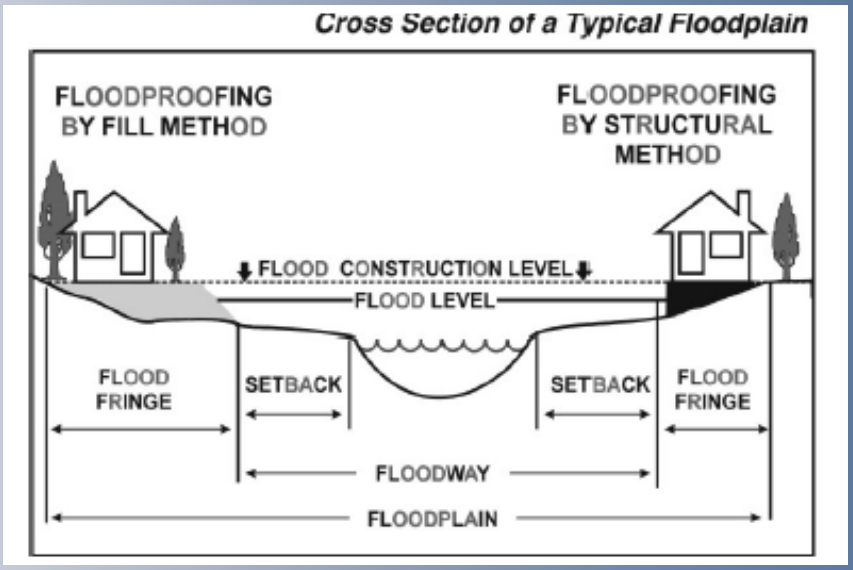
Typical Floodplain

- Setbacks are typically measured from the Natural Boundary
- Flood Construction Levels (FCL) are measured to the underside of floor systems
- Unless otherwise stated all other lakes and watercourses have a 15m setback, 3m FCL (1.5m for small lakes)



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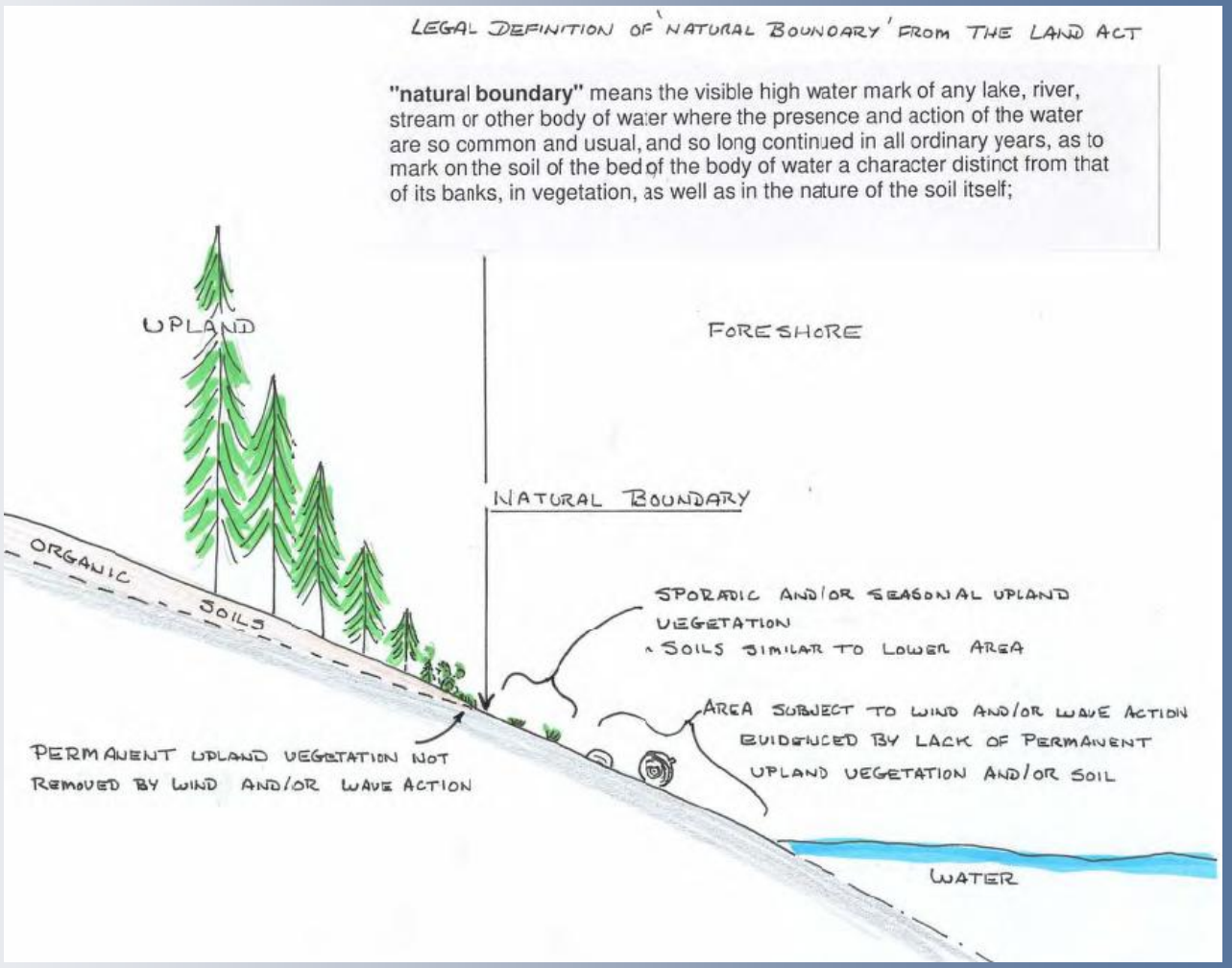
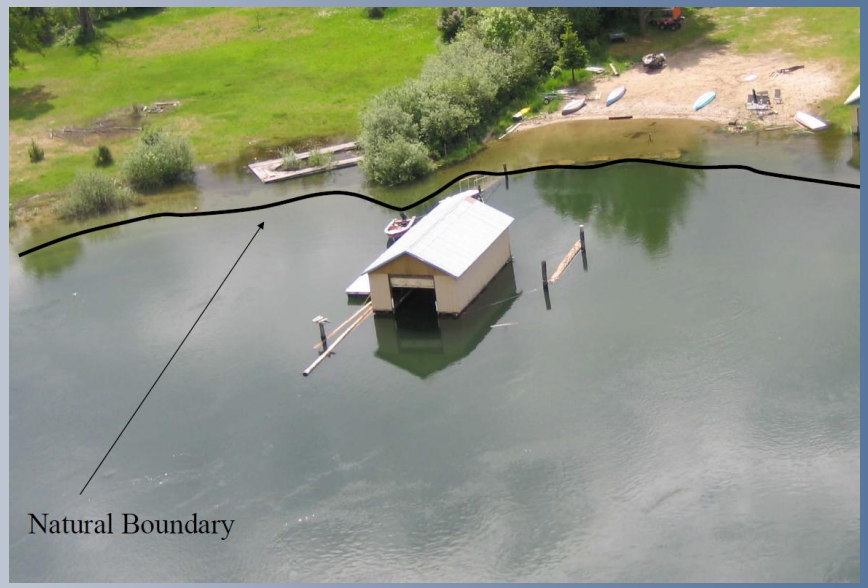
Natural Boundary

- What is the Natural Boundary?
- Simply defined it is the line along the foreshore where the vegetation starts to grow
- Natural process, occurs slowly and imperceptibly



Natural Boundary cont'd



- Setbacks are measured from the natural boundary
- Lake levels will often rise higher than the natural boundary

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Kootenay River (Creston) 200 Year Floodplain

- Kootenay River (USA to Kootenay Lake)
  - Setback 30m
  - Setback 7.5m from dikes or any structure used for flood protection
  - FCL 537.9m (1765') to 536.5m (1760')
  - 200 year floodplain defined
  - 356 private parcels

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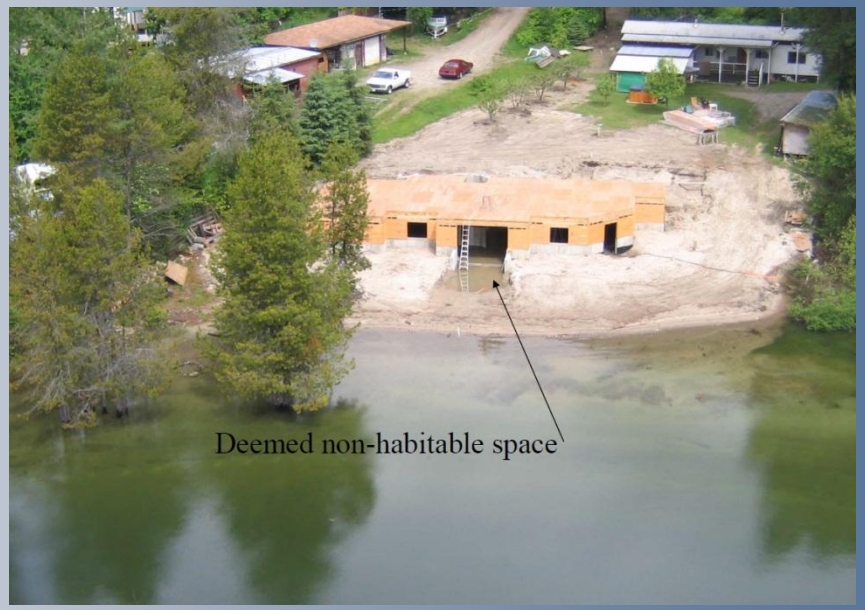
Kootenay Lake to Grohman

- Kootenay Lake to Grohman Narrows
  - Setback 15m
  - FCL 536.5 (1760') to 535.0m (1755')
  - 1584 private parcels

- 536.5 (1760') FCL for Main Lake
- Province determined that this is level the lake is expected to rise to in the event of a flood equal to the 1894 flood plus a freeboard
- The freeboard allowance of 0.76m (2.5') is to account for among other things, wave action and wind setup
- FCL includes consideration of the storage effect of the Duncan and Libby dams

Kootenay Lake Example



- 2006, West Arm at 533.6m (1750.65') - photos
- 2012, Main Lake peaks at 534.56m (1753.8') – highest since 74'
- Does the 536.5m (1760') FCL provide adequate protection?

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Kootenay/Columbia Setback & FCL Requirements

Kootenay River

- Corra Lyn to Brilliant*
  - Setback: safeline for properties with a covenant and reference plan, or 15.0m
  - FCL 454.8m (1492') to 453.3m (1487')
  - 130 private parcels
- Brilliant to Columbia*
  - Setback 30m
  - FCL 426.7m (1400')
  - 12 private parcels

Columbia

- Arrow Reservoir*
  - Setback: safeline for properties with a covenant and reference plan; or 30m (100') from the 440.7m (1446') contour interval.
  - FCL 443.5m (1455')
  - 1263 private parcels
- Columbia River (Keenleyside to RDKB)*
  - Setback 30.0m
  - FCL 426.3m (1399') to 420.7m (1380')
  - 307 private parcels

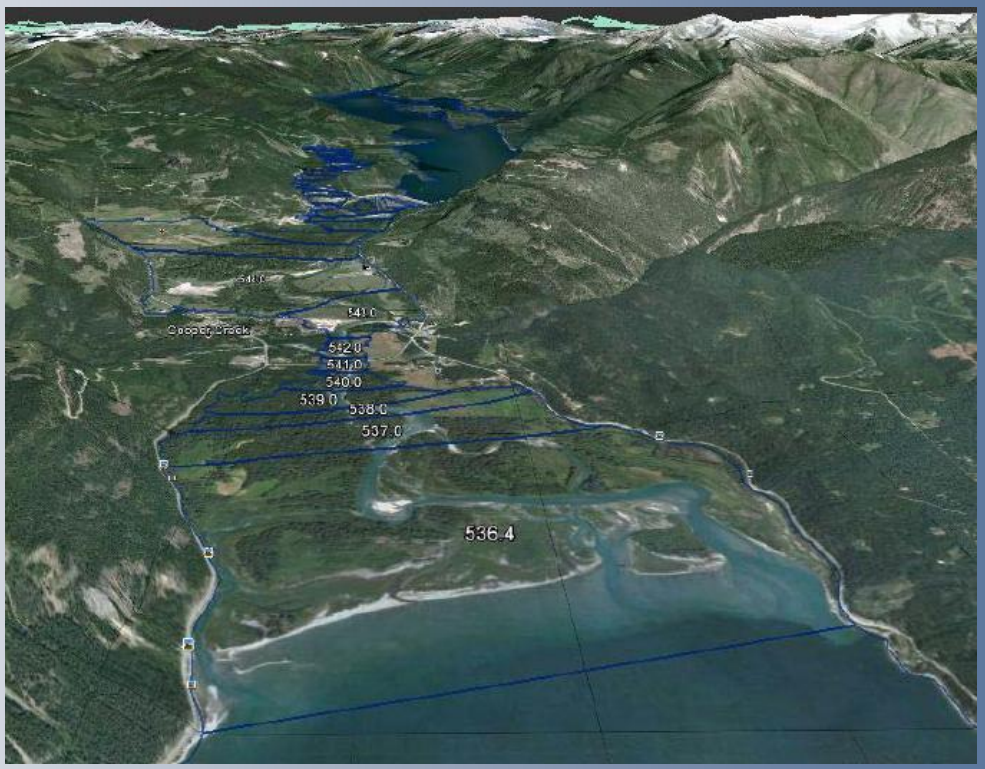
* Denotes FCL and Setback Requirements, 200 year Floodplain not determined

Regional District of Central Kootenay

Duncan Setback & FCL Requirements

Duncan

- Duncan Lake*
  - Setback 30m
  - FCL 581.2m (1907')
  - 61 private parcels
- Duncan River
  - Setback: as defined by covenant, or as determined by Schedule B, or 30.0m
  - FCL 549m (1801') to 536.4m (1760')
  - 200 year floodplain defined
  - 77 private parcels



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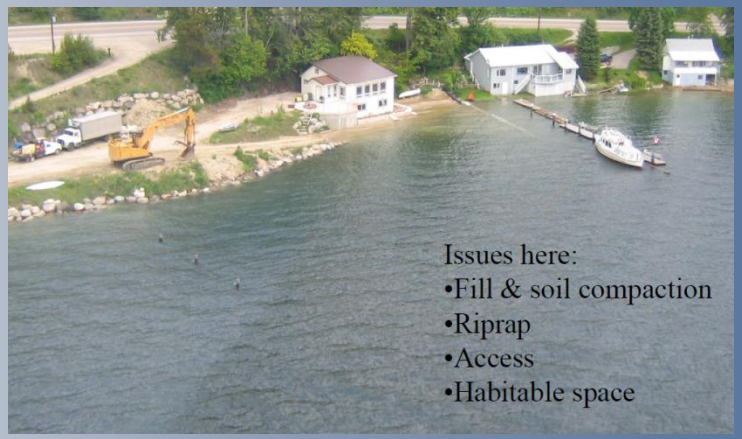
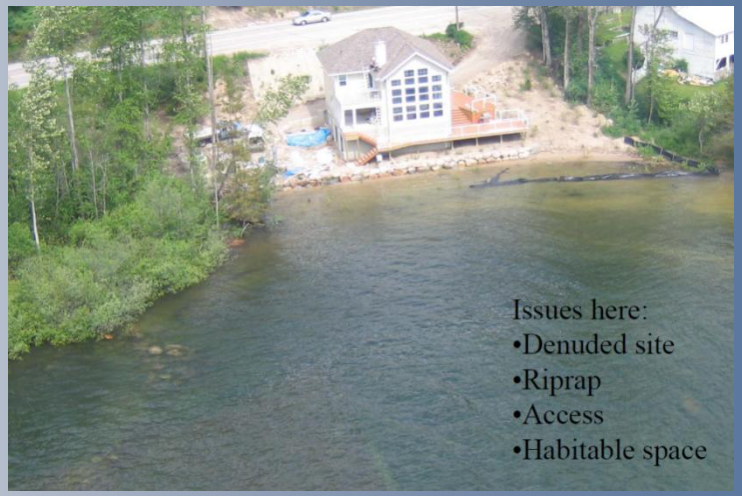
Common Concerns

- Is your home or property at risk of flood or built on an alluvial fan?
- Was your home was built prior to flood regulation (1993)?
- Does your home meet the current FCL and setback requirements?
- Have you considered flood damage potential for other values such as wharfs, docks, boat house, ancillary buildings?
- Climate change and the loss of stationarity or predictability?





Additional Resources

- To answer these types of questions, please contact RDCK Planning Staff or reference the following resources such as mapping of floodplain and alluvial fan hazards:

  Floodplain Bylaw:
  http://www.rdck.bc.ca/publications/bylaws/2080_Floodplain-2.pdf

  Floodplain Bylaw Mapping via Property Information Mapping (PIMS):

  http://mapinfo.rdck.bc.ca/Pims/

  RDCK website:

  http://www.rdck.bc.ca

  RDCK Brochure: Floodplains Alluvial Fans and Geotechnical Hazards

  http://www.rdck.bc.ca/publications/pdf/Floodplain.pdf