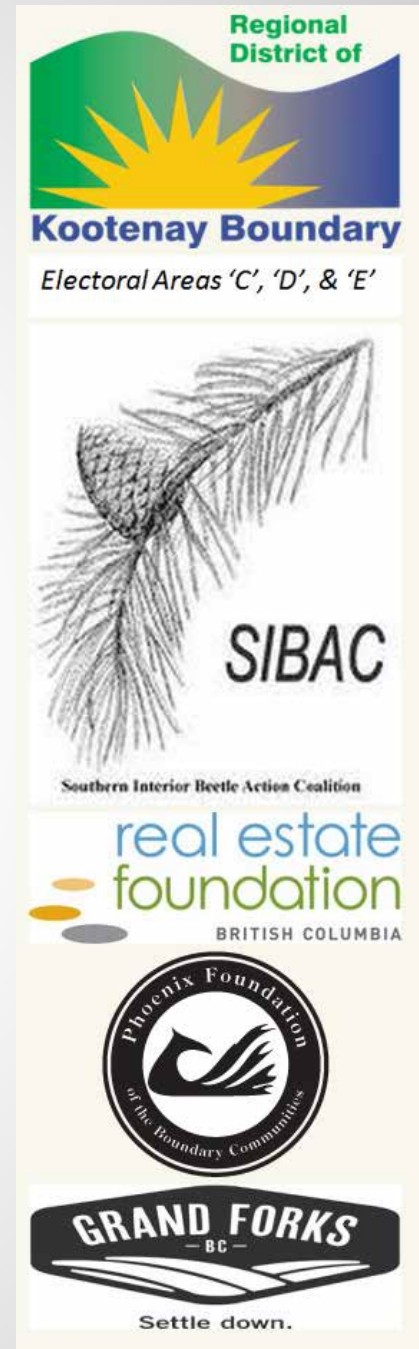


On the Water's Edge

A conversation about floodplain, wetland and
riparian issues in the Kettle River Watershed
April 15, 2014

Thank you

- RDKB
- Southern Interior Beetle Action Coalition
- Real Estate Foundation of BC
- Phoenix Foundation of the Boundary Communities
- City of Grand Forks
- And all of the Stakeholder Advisory Group members and public participants



Agenda

12:00-12:30 – **Registration and Lunch**

12:10 – **Welcome** (Stakeholder Advisory Group Chair Roly Russell & Stakeholder Advisory Group Vice-Chair Grace McGregor)

12:30 – **Structure of the special meeting & overview of Kettle River Watershed Management Plan** (Graham Watt)

12:40-1:00 – **Informal discussion with Advisory Group members**

1:00 – **Overview of Riparian, Wetland and Floodplain Issues** (Graham Watt & Jenny Coleshill)

1:30-2:45 – **Round table group discussions**

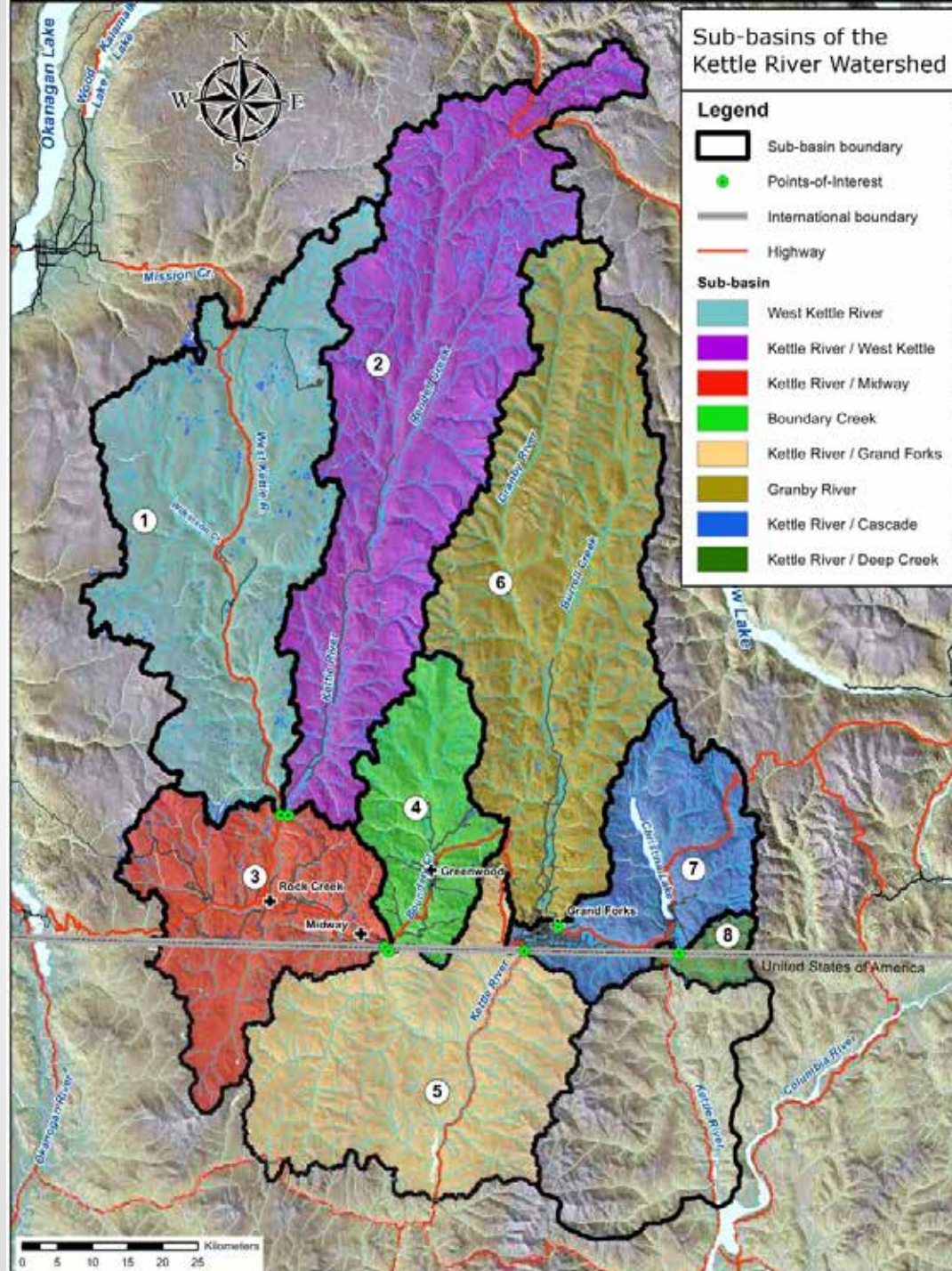
2:45-3:30 – **Sharing and large group discussion**

3:30 – **Closing and next steps**

Kettle River Watershed Management Plan

RDKB initiative to

- *study* water supply, use, quality, and aquatic ecosystem (Phase 1 “State of the Watershed”)
 - <http://kettleriver.ca/state-of-watershed>
- *plan* for the future – develop recommendations with stakeholders on policy, planning, and stewardship (Phase 2 “Watershed Management Plan”)
- Supported by great network of people (Steering Committee, Advisory Group, Technical Groups, public)





Understanding watershed issues

- State of the Watershed
- Surveys
- Public meetings
- June-December 2012



Developing Goals, Objectives, Priorities

- Issue analysis
- Public engagement
- January-June 2012



Watershed solutions

- Working Groups
- Public involvement
- Discussion Papers
- Summer 2013-spring 2014



Draft watershed plan

- Working Groups
- Technical advice
- Public engagement
- December 2013-May 2014



Implementation planning

- Feedback on draft (June 2014)
- Governance planning
- Summer
- Launch September 2014



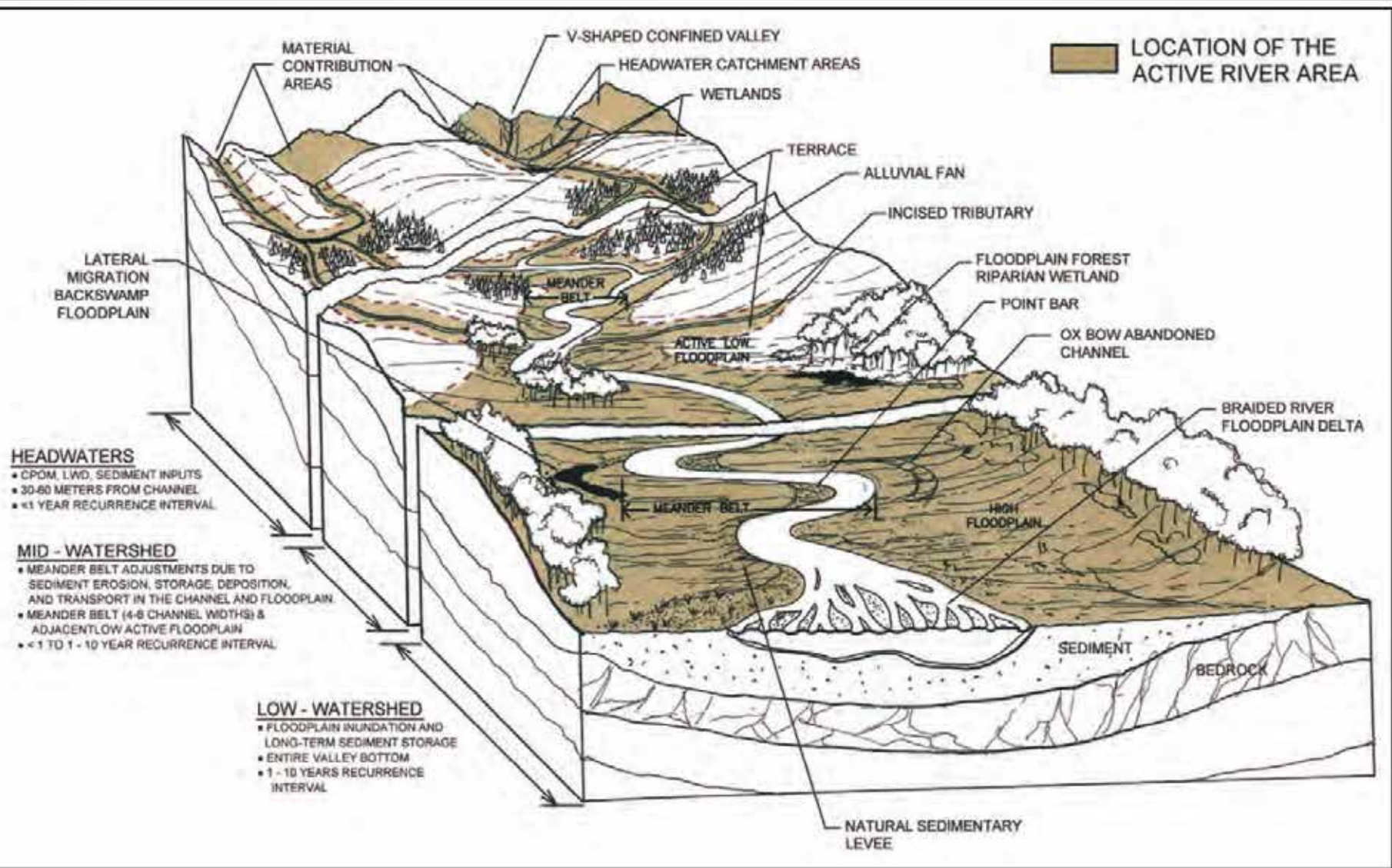


Figure 1.1 – The dominant processes and disturbance regimes of the *active river area*.





Habitat; Flow and Filtering of Water, Organic Matter, Sediment and Nutrients

Coarse Woody Debris and Litterfall; Shading

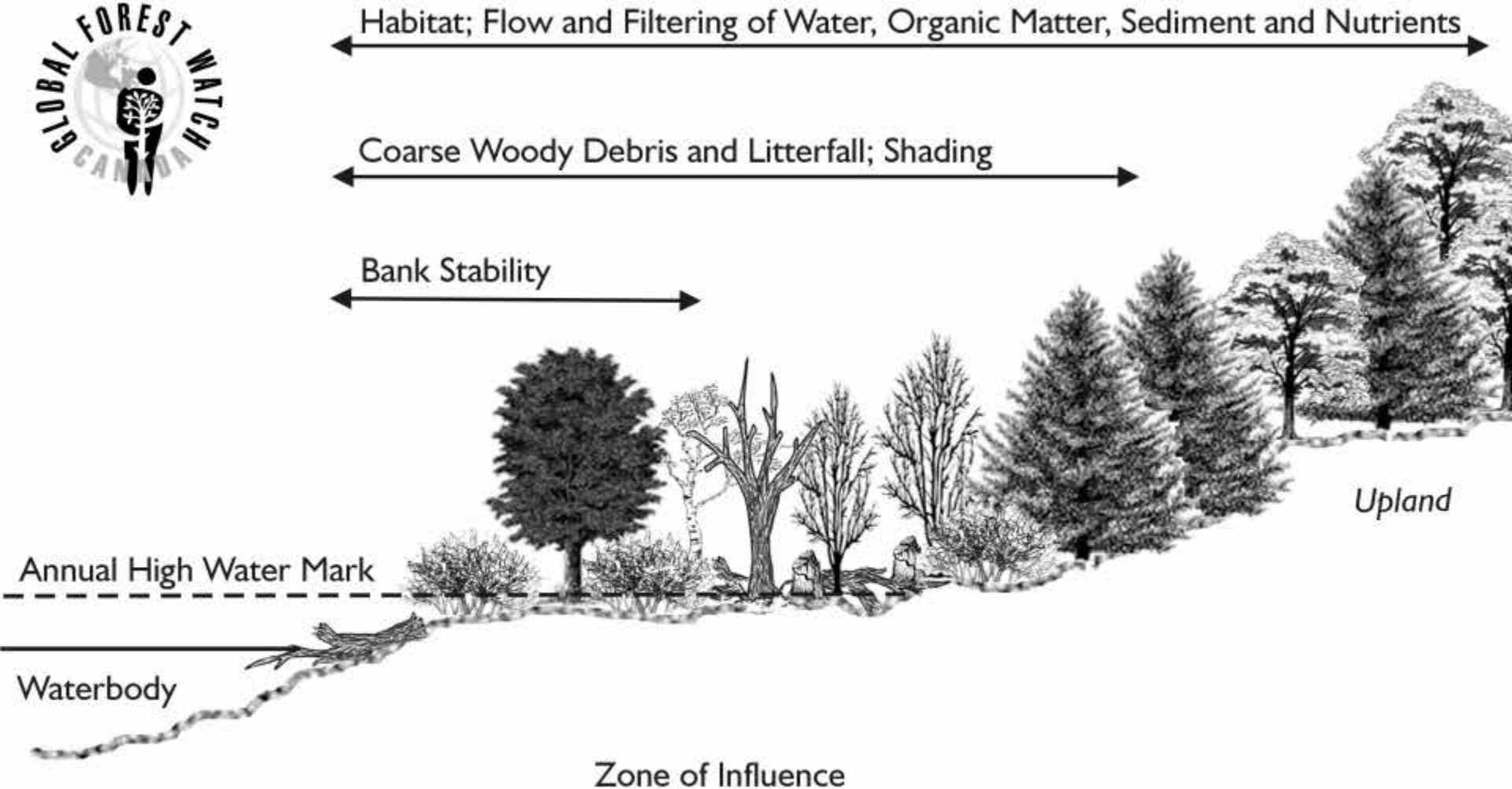
Bank Stability

Annual High Water Mark

Waterbody

Upland

Zone of Influence





Impairments

- Loss of hydrologic connectivity
 - Upstream/downstream (culverts)
 - River from floodplain (levees and dikes)
- Water quality impairments
 - Increased erosion, sedimentation and decreased filtering of pollution
- Loss of groundwater recharge and energy dissipation
- Loss of aquatic habitat

Human pressures

Regional and Watershed	Multiple to Single Reach	Single Reach to Local
Large dams	Small dams	Bridges
Water withdrawal	Channelization	Culverts
Forest clearing	Deforestation	Docks
Urbanization	Channel realignment	Channel fill
Impervious cover	Channel enlargement	Channel enclosure
Storm drains	Gravel mining	Channel linings
Wetland filling	Floodplain fill	Bank erosion/armoring
Nonpoint source runoff	Flow diversions	Stormwater outfall
Drainage ditches	Dikes & levees	
Climate change	Channel clearing	
Influences on flood, fire, drought	Thermal exposure	
	Waste discharges	









Streams change with changes in:

- Sediment supply (coarse to fine)
- Stream discharge (peak and low flows)
- Vegetation (and large woody debris)
- Time since disturbance











Benefits of a working floodplain

- Habitat (aquatic, riparian and terrestrial)
- Avoiding and reducing flood erosion hazards
- Aquifer recharge
- Water quality protection (sediment, temperature, nutrients, other pollution)
- Open space for people

Helping the water's edge

- **Retain or restore** permanent multi-layered native vegetation in riparian area (willow, cottonwood, red-osier dogwood)
 - Use for bank protection
- **Limiting development and hard surfaces** near water
- **Controlling erosion & sediment** related to roads, agriculture, resource development, and commercial & industrial activity near water

Strategies to consider

- **Land protection** (purchase or securement of natural parks, conservation agreements)

Education & training

- **Incentives** (payments or support) for landowner's practices
- **Regulations** (further set-backs for development, limits on vegetation clearing, road management laws)
- Your ideas!

Conversations

1. **Striking the balance** between protecting land and infrastructure and maintaining river function (flood & erosion planning & response)
2. **Improving function of riparian areas and wetlands** near development & settled areas
3. **Controlling impacts of resource (forestry, mining) roads** in backcountry/headwaters
4. **Encouraging** agricultural protection & conservation of wetlands & riparian areas

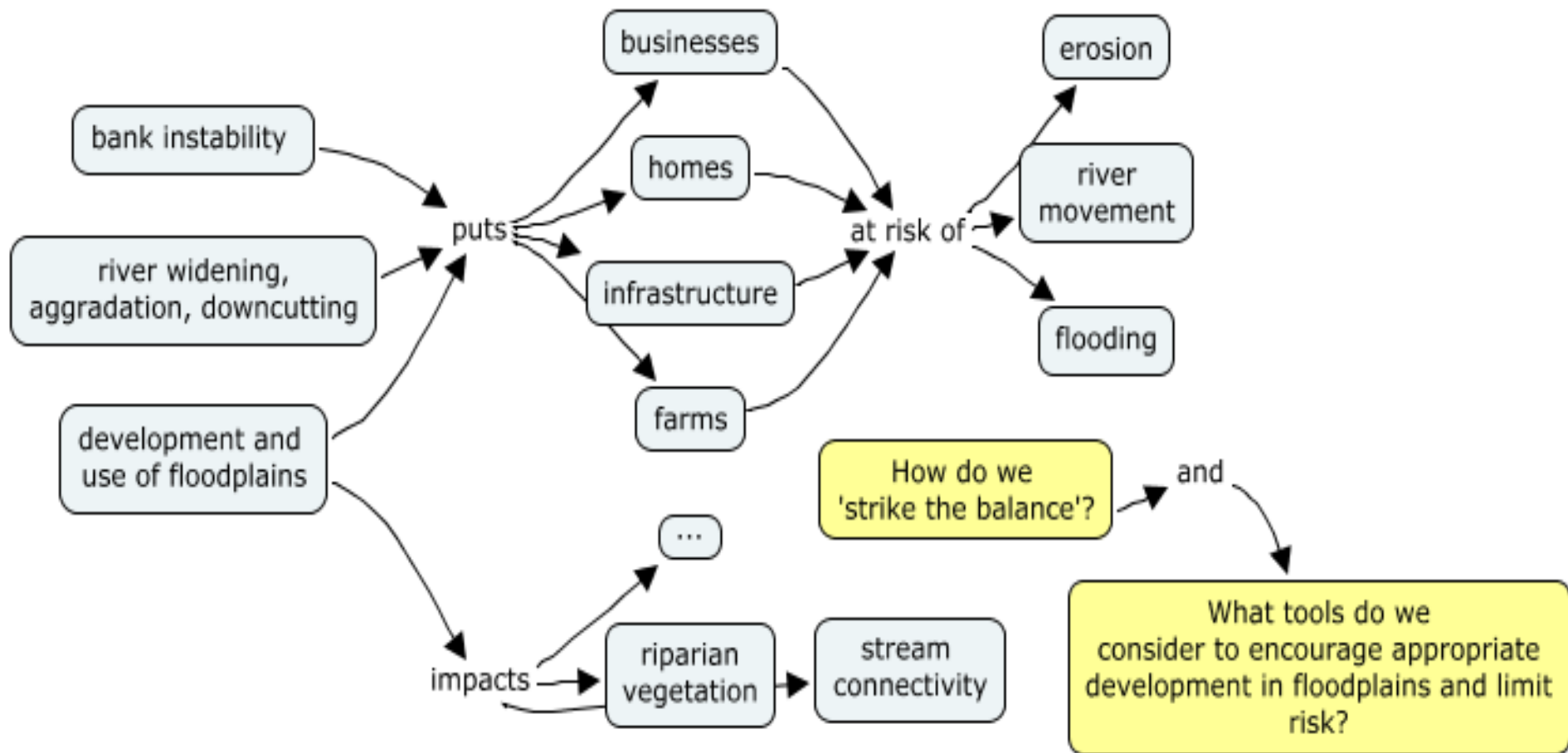
What to talk about...

- Consider the 'concept map' and add ideas about 'causes and effects' related to your question topic
- Discuss the best ways to improve the situation in your question topic
 - Consider tools such as incentives (payments & support), education, regulation (bylaws, resource management regulations)

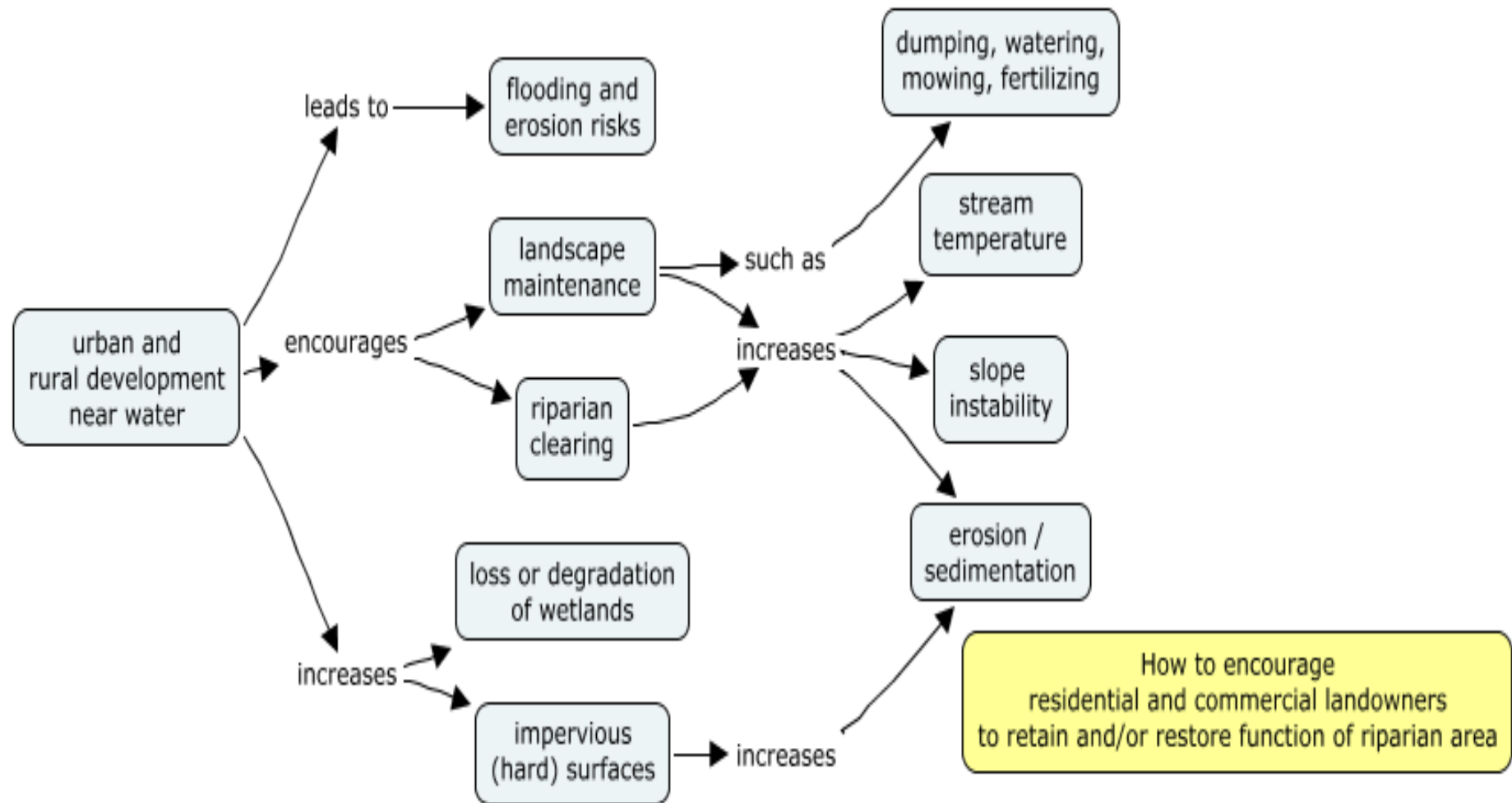
...what to talk about

- Put yourself in landowner/manager shoes
 - What would you as a landowner or manager be willing to accept in limits on land use or development near water?
 - What support would do you need (information, training, money) to implement changes if you identify issues (erosion, habitat loss) on your land?
- What are the priorities to implement?
 - More information - research & monitoring?
 - Education & skill-building?
 - Investigating regulatory needs?
 - ...

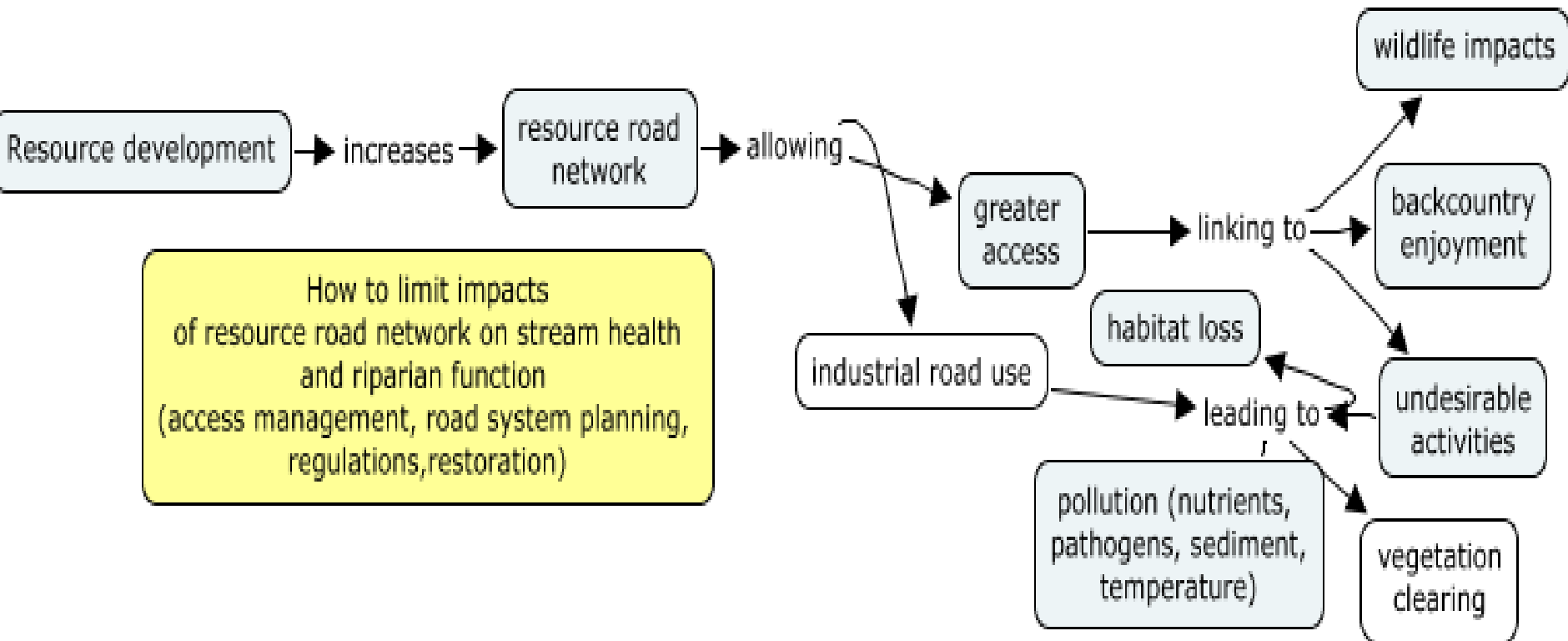
1. Reducing risk to land and infrastructure



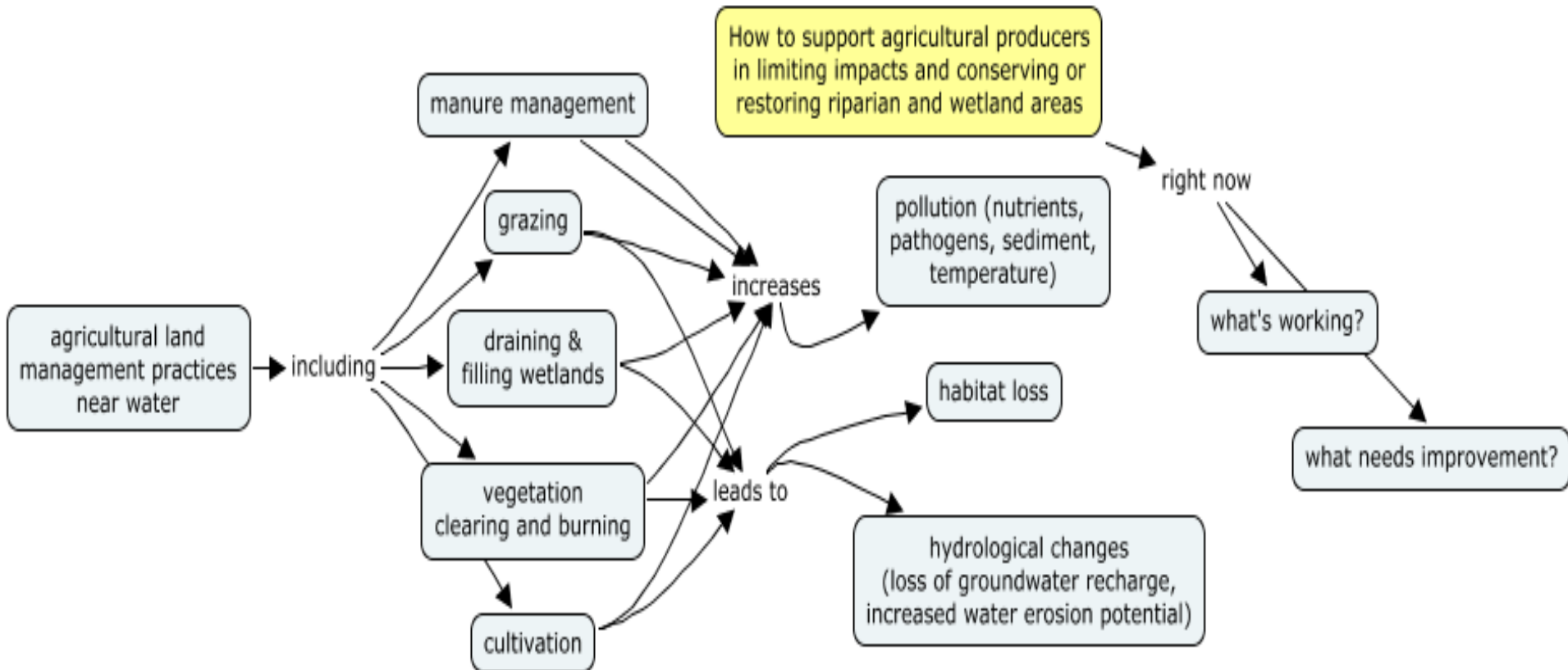
2. Improving function near development



3. Controlling impacts of resource roads



4. Encouraging agricultural stewardship



Next steps

- Discussion papers
- Field trip (May 12, spots available)
- Wetland inventory & protection workshop
June 3
- Watershed Plan open houses in June
- September launch