

## Appendix K – Breakout and Group Discussion

### 1 Breakout Discussion

#### 1.1 Introduction

In the afternoon session, five break out groups were formed to address data gaps in three topic area identified during interviews with planners, First Nations staff, consultants, scientists and mapping experts.

The three topic areas for the groups were:

1. Ecosystem and land cover mapping (3 groups)
2. Ecosystem connectivity (1 group)
3. Species and ecosystems at risk and culturally significant ecosystem mapping (1 group)

A handout was given to each group (see **Appendix F**), with instructions, prompts/questions related to the topic area, a summary of identified challenges and recommendations made during the in-depth interviews. The instructions to each breakout group were as follows:

- Briefly consider some or all of the prompts below (depending on group members' knowledge/ experience/ interest).
- For each, consider opportunities for collaborating and pooling resources between projects and organizations, and who could be involved (e.g. as part of a working group)?
- For consideration:
  - Challenges raised in interviews.
  - Recommendations and comments made in the pre-workshop questionnaire (see **Appendix B**)

Each group was also given a handout illustrating the differences between different types of mapping (**Appendix G**). The ecosystem connectivity group was also given a handout with an overview of different types of connectivity analyses that have been done in the province (**Appendix H**).

The following is a summary of the points raised by each group in their notes and while reporting back on their discussion.

#### 1.2 Ecosystem and Land Cover Mapping

##### Collaboration and Sharing

- Strategic planning – we need to bring everyone together and reflect on what others have done. Need to make sure that the product is going to be useful.
- Pool resources to standardise approach to mapping.
- Coordinate local government updates of mapping – Metro Vancouver updates will occur in 6 years.
- Data sharing has to occur both ways between the province and local governments – reports that local governments receive from developers go into a file and this information is not usable by local government or other users, it is lost data.

- Lots of new satellite information coming our way and this may be free. The issue is classification. We need to partner across jurisdictions to be able to understand how to use the new data. This also needs to be centrally coordinated.
- Decision tree – tools for using the data.
- Metro Vancouver – updated their land cover classification and Sensitive Ecological Inventory (SEI) in 2020 using a mix of LiDAR, Planet Data, field verification – we could expand on this work.
- Need to reflect on how to work with First Nations to incorporate their values.
- First Nations may be able to identify key areas in the landscape of value to them, avoiding the need for them to share important data. We need to think about finding a different way to ask people what their priorities are. Sanctuary Zones – identified by a First Nation, removes the need for them to share sensitive information.

## Data

- Better documentation of existing data – pros and cons.
- Importance of accurate baseline mapping was highlighted – high quality, high resolution, land cover and LiDAR – no solutions suggested.
- Data needs are different in different areas of the region – e.g. urban vs rural.
- New information available from the Canadian Hydrographic Service – federal organizations are often overlooked.
- Opportunities – Canadian National Wetland Inventory – Being regionally developed over the next couple of years, not LiDAR based. Looking to collaborate, including assistance with field work. There will be an artificial intelligence (AI) component.
- Recent Canadian Wildlife Service (CWS) project has tested updating SEI on Vancouver Island – a manual check of loss was undertaken – it took 18 hours of student time. There is the potential to do some of the updating manually, don't need AI.
- Provincial government needs to engage with local governments and other partners to identify how to extend Terrestrial Ecosystem Mapping (TEM) to areas not covered.
- High resolution LiDAR is not seamless for the region and the 2016 data is not fine enough.
- Coastal Western Hemlock very dry maritime (CWHxm1) on Vancouver Island is being mapped – field guide to update site series from old and new TEM is being produced.
- TEM – people don't know what information is in the TEM. Need to find more opportunities for people to use or interpret TEM. Could we theme the TEM data so that it was more useful to end users?
- Local governments will pull layers into their own mapping system.
- Baseline – it is not just about establishing a baseline now, we need to know the extent of ecosystems historically to determine our performance.
- Data that comes in through the development permitting process can get lost. At the City of Surrey, they are capturing this information, but for political reasons this is not shared. Lots of data doesn't get mined during the development planning process. Local governments have information that is not used.
- Employ an intern to enable the transfer of local government development permit information to a digital format / public location.

- Development Permit Areas are the trigger that local governments have for flagging sensitive areas, however, not all local governments may have a development permit area.
- Prioritization model – if you run the model over your entire area there is usually 25% that is never selected – areas that do not have ecological values. This tool could allow you to think backwards.

### 1.3 Ecological Connectivity

#### Methods to determine ecological connectivity

- Depends on the species you are talking about and whether you are talking about functional and structural connectivity.
- Predictive modelling to look at how climate will change. Viability of refugia will change with climate change.
- Combination of rough datasets and additional information to develop best practices.
- UBC connectivity mapping – is focused on hubs and boosting connectivity within them.
- Values – whose values are going into developing the connectivity metrics (policies/practices). Colonial history will affect how our studies develop.
- Map existing protected areas and model climate suitability of potential corridors.
- Connectivity is different at different spatial scales – provincial vs local government.
- Need to look beyond local government boundaries.
- Next step, combine data sets and develop best practice guidance for local governments.

#### Comments/Questions

- In the context of climate change we have best practice such as Develop with Care, but this doesn't respond to climate change.
- Prioritization tool includes a connectivity layer. Tory Stevens, has developed connectivity maps for the province. Lots of models available (circuit theory). Look at what is available and then consider how they are used.
- Transboundary working group for Cascadia – published a lot of climate related projects. Need to look south of the border.

### 3. Species and ecosystems at risk and culturally significant ecosystem mapping

#### Mapping

- How can we use mapping to predict species and ecosystems at risk? – if you understand the environmental factors that a species at risk has/needs you can then use a common species to predict its range.
- Red/blue project boundary – advocate for the blue boundary (larger study area) proposed by the UBC/CDFCP project.
- Jurisdictional values – a provincial worker may be focused only on provincial species. This limits the mapping outputs.
- Better awareness of when datasets are released. How do we raise awareness of new data layers?

## Tracking progress

- Objectives – we need to start here. What are our objectives for the CDF? Objectives are hard because no one wants to draw a line in the sand. We then need to start measuring against that. What does success look like?
- Recovery Strategies – what are our objectives for multiple species recovery. We need to start articulating that.
- SPOT – provincial web mapping tool that we can share that shows our [provincial] objectives. Has widgets that demonstrate progress in relation to objectives.
- Genetic diversity was discussed.
- Provincial legislation that proactively encourages local governments to protect species at risk is needed. Local governments need publicly accessible evidence. However, if an official wants to get a planning application through, they will ignore protected species information as there is currently no legal protection.
- CoVIS (Learning Through Collaborative Visualization)– bringing indigenous values into the project at the start. Cultural plants often align with species at risk. However, there are other sensitive cultural features that do not align with western science/mapping. However, these need to be included. First Nations bring a more wholistic view to the project.
- Objectives were talked about in relation to land conversion. Need to set a target for the protection of habitat.
- Objectives can continue to shift. Potentially you need to show trends.
- Need clear objectives and targets so that organisations can state - Before you came to us, we set an objective and your project will be contrary to the objective. This enables an organization to articulate its priorities/aims/targets.
- CDFCP Conservation Strategy was updated to include objectives for the CDF.
- Objectives don't have to be numbers based. However, this view point was not supported by all parties at the workshop. Some believe that number-based targets are needed.

## 2 Group Discussion

### 2.1 Availability and Compatibility of Spatial Layers

- It was requested that the CDFCP share the inventory of mapping layers that has been developed with participants of the workshop (see **Appendix I** for CDFCP's inventory of spatial layers identified during in-depth interviews, and **Appendix C** for a list of spatial layers recommended by workshop participants).
- It was identified that the incompatibility of scales and translating between projections can be difficult.

### 2.2 Natural Asset Inventories

- Consider adding a habitat quality layer to Natural Asset inventories.

### 2.3 Development Permit Areas and Checklists

- Encourage local governments to use blanket Environmental Development Permit Areas (EDPAs) where they can ask for more detailed environmental information e.g. where all development proposals across a landscape or on greenfield areas trigger a development permit and information requirements.
- Produce an EDPA checklist for developers to go along with the permit areas.

### 2.4 Local Government and Community Data

- Explore ways of encouraging local governments to collect and share the ecological data provided by developers.
- The City of Surrey set up an iNaturalist page, but the problem has been getting this information used by local government staff. Someone needs to extract the data and then get it to be used by planners/decision makers.

### 2.5 Sensitive Ecosystem Inventory (SEI) Mapping

- Local governments are setting targets to undertake SEI mapping but they don't have the resources to deliver on these objectives.
- SEI is being misused, we need to reflect on lessons learnt. Local governments are often using old SEI that doesn't capture large tracts of mature forests that have reached maturity since the original mapping was done.
- Explore options for developing an SEI equivalent that can be updated rapidly.
- Make the mapping coarse and make it clear that further assessment is required to avoid over analysis of mapping.

### 2.6 Updating Mapping

- Tree structural stages information to be added to terrestrial ecosystem mapping (TEM) in spring 2023.
- Explore options for using tree height layer as a proxy for age or maturity of forest stands, as a means of updating the SEI.

## 2.7 Mapping Standards and Guidance

- There are so many different purposes for mapping, so many different scales. Is there a reason there aren't standards?
- The province has standards for SEI mapping but some local governments, such as Metro Vancouver, have created additional classifications.
- Local governments don't quality assure mapping products submitted as part of a permit application, they rely on the consultants to submit a quality product.
- Could provincial government, local government, first Nations be brought together to produce guidance on mapping? If so, who would be responsible for its implementation e.g. province?
- If regional mapping standards and guidance were developed that crossed local government boundaries they would need to be developed by an organization that has the authority to do so (e.g. the Province).
- Speak to Municipal Natural Assets Initiative (MNAI) about mapping standards as they have been producing standards relating to Natural Asset Inventories.
- There is a need for a laypersons guide to ecosystem mapping and species at risk mapping.

## 2.8 Piloting Spatial Layers

- Consider trialing the Metro Vancouver data/approach elsewhere in the region(land cover, change tracking, SEI).
- Review the Biodiversity Atlas produced by Metro Vancouver in 2014 and understand if the information was used by municipalities in the region.
- Metro Vancouver are looking to incorporate the Biodiversity Atlas into UBC Botanical Gardens mapping system.
- Ask the question: what are all the problems that local governments have experienced using the mapping information that you already have? Then focus on producing what is missing.

## 2.9 Indigenous Data

- Explore ways of integrating ecosystem mapping with indigenous data.
- Data sharing is always going to be problematic for First Nations because the information is confidential. The CoVIST project has highlighted that this can be achieved but it is tricky.
- Stolo has its own referral portal, which is worth reviewing.

## 2.10 Ground-truthing

- Could we leverage others to undertake ground truthing for ecosystems like Parks Canada is doing this?

## 2.11 Crowd-sourced Data

- We found iNaturalist information was very biased and didn't provide the sensitive information that local governments needed.
- Citizen science is powerful because it is publicly available and it doesn't get stuck in a provincial database.

- The focus of the Institute for Multidisciplinary Ecological Research in the Salish Sea (IMERSS) has been at a granular scale. The Biodiversity Galiano approach can be adapted to other areas. It uses citizen science data and historical records.

## 2.12 UBC Biodiversity Atlas

- The challenge will be the user interface for the UBC Biodiversity Atlas and ensuring it delivers on the needs of users.
- Review the Biodiversity Atlas of British Columbia (Austin & Erickson 2009; it refers widely to the Coastal-Douglas-fir Zone). Reflect on lessons learned from developing that product and implement adaptive management.

## 2.13 Connectivity

- There are two scales for connectivity mapping: regional and municipal level. The City of Surrey as a suite of biodiversity indicators. These are different to those that were selected for the connectivity analysis completed by Metro Vancouver.
- Research has already identified ideal indicators for connectivity. Explore how these could be translated for use by local governments / First Nations in our area.
- Develop a catalogue of connectivity mapping that has already been done even if it is at different scales.

## 2.14 Future Collaboration

- Bring local government and the province together to talk about emerging mapping tools and host a round two workshop.
- I would like to stay in touch with the project and receive updates. The information that will be generated is critical in relation to the conversation on climate change.
- It has been useful to understand how much information is available, learning about the focused layers has been valuable.