



MEETING	LCDB Technical Advisory Group Meeting
DATE	24 April 2012 1:00 pm
ATTENDEES	<p>Tim Park (Greater Wellington RC) - Chair Deborah Burgess (MfE) Reece Hill (Waikato RC) Zach Hill (ECan) Jim Lambie, (Horizons RC) Fran McNamara (LINZ) Amy Rush (Environment Southland) Richard Earl (DOC) – deputising for Elaine Wright David Pairman (Landcare) Peter Newsome (Landcare) James Shepherd (Landcare)</p>
APOLOGIES	None
SUBJECT	Land Cover Database Programme

1. Apologies

None

2. Introductions

- A round table of introductions allowed everyone to briefly state their role in their own organisation and also for the LCDB project.
- Note: Reece Hill is also convener of the Land Monitoring Forum.
- Tim Park is on the steering group of the Regional Council Biodiversity Forum.

3. Election of Chair

After some quick finger pointing Tim Park was elected as Chair unopposed.

4. Project status

David gave a short run-down on the LCDB programme's background and current status. See David's PowerPoint for more info, but key points were;

- LCDB was originally intended to be 5-yearly, two editions done but third is late.
- Availability of LUCAS imagery (2008 & 2012) provided impetus for two new editions.
- Landcare has MSI contract for these and a parallel research programme.
- Steering group was formed and has met three times – again next week
- LCDB-3 mapping released for checking region-by-region from 6th Dec to 7th March.
- Seven of the 15 regions have returned corrections – variable effort.
- Need all returns by mid-May.

- This Technical Advisory Group has been set up to make recommendations on technical issues. Members drawn from the stakeholders.

Peter was asked to elaborate on how councils responded and prioritised, which he did. A lively discussion followed on the response to the checking process, our engagement, consistency, standards and related issues. Some key points from this discussion were;

- Rather than a single point of contact we should aim for a broader interaction within councils. (Tim).
- There are lots of other useful sources of information out there – but it needs coordination.
- We want the LCDB to be as good as it can be so data standards around what we include are important.
- Role for Dataversity project.
- Both field and GIS staff can contribute – needs internal (council) coordination.
- Some imperfection is allowable/inevitable (Jim).
- Could we send out (electronically) queries on specific polygons to council staff?
- Need to do more work on surveying councils on compatible data source and gaining permission for use of existing polygons where this is an issue.
- Anne-Gaelle's wetland layer was mentioned several times as an example of a data set that should be drawn on – some polygons may be too small for LCDB.
- James outlined how we should take a hierarchical approach where additional work could be done on specific classes such as for wetlands rather than the whole LCDB being at the same specification.
- Peter pointed while we will progressively be trying to bring together and rationalise data sources collected for different purposes, many of the things discussed may not even be achieved by LCDB-4.

5. Review of TAG terms of reference: Chair

While these had been circulated prior to the meeting, nobody had any pressing changes, so Tim asked that members notify him of any issues with the terms of reference and he would sort them out offline with David.

Action: All to review terms of reference and alert Tim to any changes required.

Action: Tim/David - Finalise terms of reference.

6. Resolve questions on LCDB-3 processing:

Peter ran through the six issues that had been circulated and then each was discussed one at a time.

Issue 1 - Bare surface classes.

The thematic space is not filled by the class list – specifically how to classify bare ground. Soil not such an issue as it would be transitory as part of a cropping or other farming practice so should be interpreted as such.

After some discussion **it was agreed** that the “River and lakeshore gravel and rock” and the “Alpine gravel and rock” classes should be combined as a “Gravel and rock” class.

It was recognised that gravel in a coastal setting would still be part of the “Coastal sand and gravel” class. We were unsure how any coastal rock was currently classified but agreed that it wouldn’t be changed by this except as above.

Issue 2 – Redundant boundaries.

As a result of fixing past errors, some adjacent polygons will have identical classifications at each time step (LCDB-1, -2 and -3). It was agreed that this is messy and the redundant boundary should be removed in the released version.

However, that raised the issue of tracking change due to correction of past errors rather than actual land-cover change. This could be important to reconcile with figures in reports from previous analysis. **It was agreed** that a layer of corrected errors should be produced whenever a new version of the LCDB is released. Where a part of a polygon is partitioned off as a previous error now corrected, only that part is put in the “corrected” layer, not the parent polygon (which has also obviously been modified).

Issue 3 and 5 – Coastline and Coastal saline vegetation.

It is desirable to have LCDB’s coastal boundary consistent with some other recognised coastline rather than just what the mappers saw in imagery. However, mangroves, estuaries and other saline vegetation are sometimes usefully mapped outside of the coastline.

Tim pointed out some policy implications as different levels of government have responsibilities defined in different ways. E.g. city and district councils have responsibility for land down to the low water point, regional councils administer the coastal marine area (CMA) defined from the mean high water spring out 12 nautical miles.

It was agreed that the LCDB should be clipped to the current LINZ topo50 coastline except that where “herbaceous saline vegetation” or “mangrove” extends beyond this; the polygon formed beyond the coastline should be retained and tagged as external to the coastline.

Issue 4 – Undersized polygons.

There are many sub-hectare polygons in LCDB-2, often due the way previous line work has been formed or combined rather than any real feature on the ground. However, some features may be accurately mapped despite being smaller than the one-hectare mapping specification. These may have been mapped due to their importance, e.g. forest remnants, and it seems a shame to throw out that information.

It was decided to remove any polygons less than 1000 square metres (0.1 hectares).

Issue 6 – Higher resolution datasets.

As discussed earlier there are other higher quality datasets around but with a more limited focus either spatially or in features mapped. It was generally agreed that over time we should aim to make better use of these – even if it creates a variable quality in either the spatial or thematic sense. It was acknowledged that where a higher quality polygon was to be used, any existing LCDB polygon representing the same feature would have to be removed, and other adjacent polygons would have to be grown up to the new boundary where necessary. None of this type of inclusion is planned for the initial LCDB-3 release.

7. Licensing:

David discussed why he raised this issue – to see if the licensing could be used to avoid multiple improved versions of LCDB being created. However, we also want to allow the maximum use of LCDB (both commercial and non-commercial) and it seems that anything beyond the Creative Commons CC-BY license would inhibit this.

It was agreed the best way forward was to use CC-BY and make the feedback/error-correction processes effective enough that no one will have the incentive to create alternate “improved versions” of the basic LCDB data.

Action: David takes the CC-BY recommendation back to Steering group.

8. Accuracy assessment recommendation:

James outlined some history of the LCDB accuracy assessment. Once mapping was completed, LCDB-1 was assessed independently at 94% accurate, but a methodology was used that allowed 20m of spatial error while still deeming a point “correct”. There has been no subsequent accuracy analysis. However, errors found in the course of LCDB-2 were propagated back to LCDB-1 (forming LCDB1.2). By James’ analysis 20% of the area was changed, making the basis of the original 94% accuracy figure questionable. Also pointed out that truly comprehensive accuracy assessment could be a bigger job than the mapping itself.

A discussion followed on a number of related points;

- Why do we need an accuracy figure and how would it be used? – Considered best practice, helps understand where it is appropriate to the data.
- Could we use permanent plot data or other databases?
- James proposed an initial national survey of a moderate number of random points (~10,000) stratified by class to identify issues. Could be done efficiently using his software operated by staff not involved in mapping. Could also generate some stats focused on the real change areas to determine the change accuracy.
- Some council reps (Tim, Jim) felt that sub-national accuracies would be of some benefit. To be statistically significant it would need a lot of points in each region, which could get expensive.
- James keen to involve councils - discussed providing a tool for council staff to do more detailed regional assessment once initial national survey identifies issues.
- Some concern (Debbie) that we ensure statistically robust results – i.e. need proper experimental design.

It was agreed that a national survey should be conducted first as per James's suggestion.

Action: James to plan and instigate an initial national survey – getting appropriate input from a statistician on the experimental design.

9. LCDB-3 future updating, versioning, and release policy:

LCDB-3 will be put up on Landcare's download portal (Iris.scinfo.org.nz) by the end of June. A number of options and issues around the release were discussed.

- A basic mechanism will be set up for feedback of errors enabling incorrect polygon classification to be reported - perhaps with the facility to attach jpegs to illustrate that or boundary issues. The group felt the development of online facilities to edit line-work were not warranted at this stage.
- Group unanimously preferred staged releases (3.0, 2.1, 1.3 etc) rather than a continuously updated dataset. Noted that there may not be time or much point in aiming for a release between 3.0 and 4.0.
- If redundant boundaries are dissolved (issue 2 above), then no way of tracking corrections. A "corrections" layer should be generated with each new release.
- Discussed Landcare's online mapping sites (OurEnvironment and Smap) and asked if the group wanted an LCDB focused site, possible with emphasis on change. Consensus was that LCDB-3 should simply be available as a full layer in OurEnvironment.

Action: David to ask staff responsible for OurEnvironment about getting LCDB-3 layer included.

10. LCDB-4 planning:

Discussed if we should hold a series of workshops. Tim suggested that once LCDB-3 is released and people have had a chance to digest, we should use an online survey (such as Survey Monkey) to gather feedback and other information about council held datasets. This idea had wide acceptance.

11. Other questions

Two questions from the Steering Group were put to the Technical Group for consideration;

- LCDB-1990 – any value?
- Reduced resolution LCDB?

These were not fully discussed at the meeting, rather members will form opinions and discuss at a future opportunity.

12. Other business

Future meetings are likely to be electronic rather than in person. Aim for every six months.

Action: David to arrange next meeting.

Meeting closed 4:35 pm