MEETING	**LCDB Steering Group Meeting**
DATE	**27th August 2012 10:00 am**
ATTENDEES	MSI – Viv Smith (Chair) MfE – Len Brown, DOC – Allan Ross MAF – Craig Trotter NZ Geospatial Office (NZGO) – Mike Judd Regional Council Rep – Reece Hill Landcare Research - David Pairman, James Shepherd
APOLOGIES	Peter Newsome, Karl
SUBJECT	**Land Cover Database Programme**

1. Apologies

Peter Newsome, Karl

2. Reece Hill - introduced

Reece replaces Ross Phillips, representing regional councils. Reece is Waikato Regional Council program manager for land soils wetland terrestrial ecology programme, in resource information group and he convenes the Land Monitoring Forum. We did a round of introductions for Reece.

3. Minutes of May meeting and matters arising

- Action items from May meeting reviewed:
    - Some progress reported by David on WMS/WFS – two options; extension to Koordinates software ($10k), or LCR implementation of open source. Asked for identification of any early adopters. No one seemed desperate to use this, but it is seen as best practice for data delivery. LINZ also doing a lot of work in this area.
    - Members publicising LCDB3 - covered in later agenda item.
    - David has submitted an abstract for Digital Earth Summit in Wellington – accepted and will be presented next week.
    - Viv and Mike's publicity for LCDB on MSI and NZ GEO websites - to be covered in later agenda item.
    - James has written up accuracy assessment – discuss in later agenda item.

ACTION: No outstanding actions to carry over.

4. Recap of LCDB v3.0 results and launch

David reported the successful release of LCDB v3.0 on http://lris.scinfo.co.nz on the 29th June.

At Karl's suggestion we are trying to avoid confusion between the database version and the time-step. So we are deliberately avoiding the term LCDB-3 and using LCDB v3.0 which includes polygon attributes for each of the three time-steps.

Over 100 downloads so far (~200MB each) from a mix of organisations, including all councils central govt, universities and individuals. Not always obvious who the registered email user would be downloading for.

Change (from LCDB-2) is also available as a separate dataset – both temporal and non-temporal (error fixes and smoothing) along with attribution as to change authority. That dataset has lots of slivers but is a means of tracking back to earlier analyses done using LCDB-2.

Launch publicity:

- Email to everyone on release (all mailing lists and anyone who had contacted us).
- Websites – LCDB, Landcare, Soils
- Press release
- Allan Hewitt presented at Land Monitoring Forum – Reece commented it went down well and need for users to be involved throughout the process for version 4.
- Article prepared for Soil Horizons newsletter
- Digital Earth Summit talk planned for next week.

Feedback has been positive. There were a number of congratulatory emails and positive comments on website from Geographx.

5. On-going publicity/engagement

Nothing yet on MSI website – Viv would like copied of some of the press release material to translate into a smaller news item.

Discussion on providing some teasers, e.g. "here is LCDB and hare are the five interesting things it shows". Not sure if this is our role to do analysis of the implications, also some hesitancy before we complete any accuracy assessment.

Viv suggested we should solicit feedback on the download portal. David Pointed out that as a result of TAG we are intending to survey users.

Len pointed out that a press release on change could be politically sensitive – e.g. increased urbanisation could be interpreted into "RMA failing" type headline.

Consensus was that Landcare should focus on how LCDB is being used rather than lead analysis themselves.

David covered the vital stats of the LCDB v3.0 - around 64,000 polygons manually changed (36% real and the rest error corrections), and up to 13 million via (semi-)automated processes including rubber banding, coastline correction, and line-work smoothing.

The Topo50 coastline adjustment (requested by TAG) was demonstrated. This makes the LCDB more compatible with other datasets.

Introduce the class change matrix – big changes in forest particularly harvested/non harvested. Len mentioned environmental report card – he should compare with LCDB results to check no surprise for Minister is anyone else does an analysis. Some discussion on the difference between this change matrix and a confusion matrix to show accuracy that James is working on. Some discussion on how the change matrix should be presented to Digital Earth – show the possibilities of how it can be used but don't focus on demonstrating or analysing specific class changes.

Mentioned that we are intending to survey users, look for datasets that could be useful in V4, implementing an on-line error reporting system.

We could rush into V4 but prefer to wait till some of the new techniques are more mature. Probably start finalising V4 methodology around April next year.

Craig asked if line-work generalisation methods should be commercialised. We should at least publish something – perhaps make it available open source.

Action: David to email publicity material to Viv.

Action: David to make change matrix available to Len and others.

6. Accuracy assessment: James

James presented a one-page plan of the accuracy assessment approach

- Initial simplified accuracy assessment model to provide preliminary assessment of the land cover class accuracy. About 10,000 random points, i.e. ~150 points/class/island.
- Follow up with a more defensible assessment by augmenting more points where result is statistically weak.
- Do an assessment of change accuracy by focusing on sampling within change areas and also outside change areas to assess level of missed change.

Will end up confusion matrix and map accuracy for 2007/8 map and similar for accuracy of change between 2001/2 and 2007/8.

The TAG group would like councils to be involved in accuracy assessment to further refine figures for their own regions. James is keen for that to happen and MfE have offered to make their web based assessment tool available for this.

Action: James will present results at next meeting along with plan on how many more points are required to generate a statistically robust figure.

7. Research objective for next year: James

Research tab on web site has been populated – and this is on-going.

Majority of money has been spent on mapping LCDB v3 but ~100k spent on research with main outcome the new multi-date segmentation work (including paper).

Current focus on:

- Classifying polygon segments

- Integrate these classified polygons within an existing map (smart editing)
- Underlying work on BRDF to correct imagery – use of model helicopter (UAV) capable of carrying a pair of cameras. Could also be used for accuracy assessment.

James mentioned that we are considering purchasing a radar image layer to help separate some woody vegetation such as willow that spectrally looks like grass.

It was noted that this presentation is our plan for this year's research in terms of our MBIE contract. There was general agreement that the research plan was well focused and we had presented rationale for each aspect.

Lidar was discussed, particularly if Wellington Regional would get coverage. James pointed out that Lidar coverage needs to be ~8 returns/sq m to do "good stuff" in heavy vegetation. It seems unlikely that Wellington Region will get better than 0.5 return/sq m outside of populated areas. While there is lots of potential we are unlikely to have useful national coverage any time soon.

Landcare's work with MfE to align some LCDB/LUM classes (crop and urban classes) was discussed. Longer term aim to produce land cover and layer rules on top to provide land use – i.e. not double work the same data for LCDB and LUM. A brief discussion on future image sources and ways of funding it followed.

Action: James to check if ALOS purchase would be whole of government license.

8. Other business

- TAG membership – Now that Reece has joined the Advisory group does that leave a gap on the TAG, particularly around biodiversity knowledge? There was discussion in the advisability of using another WRC person or looking for someone with the right skills in another RC. Was left for Reece to think about it and come back with a suggestion.
- Next meeting - Should be March.
- Agreed to keep Viv in as chair

Action: Reece to suggest a replacement on TAG.

Action: Reece to provide a list of key people on special interest groups.

Meeting closed 12:08 pm