LCC Networks and Data Management Survey

Draft - October 16, 2012
Interpretations by Pat Lineback (USFWS R8 GIS Coordinator) and Sean Finn (GNLCC Science Coordinator)
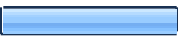
In August and September 2012, the Landscape Conservation Cooperative (LCC) Network Data Management Working Group (DMWG) initiated a survey to understand the current status and future plans of the 22 LCCs regarding their data resources, information management, storage and dissemination, and project tracking. The survey questions were intended as a 'first cut' to gather basic information and guide (1) additional, more specific information gathering to understand LCCs collective capacity to manage and deliver high-quality science data; (2) identification and prioritization of data management needs, and (3) short- and long-term priority activities of the Data Management Working Group.

Below are the raw results of the survey including a summary of answers to discrete questions and all additional comments provided. Nineteen of the 22 LCC responded to the survey. Some reflections on the results include:

- There is extremely varied understanding of what data management actually is or does - there is a clear need to define and communicate what the roles and expectations of LCCs are at national, LCC, and project levels. It doesn't appear that there is clear understanding or expectation of what LCCs should be doing as it relates to data management.

- There needs to be consensus on data management roles and responsibilities by both individual LCC's and at national LCC leadership level. For example, the survey results suggest that many LCC staff feel that data management role only applies to projects directly or indirectly funded through the LCC. National-level leadership (the LCT, Science Coordinators Team, or LCC Council) and the DMWG should specify what the LCCs data management role should be. Expectations, roles, and responsibilities are so widely divergent that there needs to be some basic criteria established across LCCs supported by an environment of accountability. For example, results suggest some of the individual LCC networks plan to rely on a part time student to "lead" and support their data management. Is this going to be a successful model?

- There needs to be specific agreement on policies and best practices relating to data management. See question 13 and the wide variety of deliverables being produced by LCCs. As an example, if LCC's fund a new data clearinghouse, should there be some standards required by PI? So, can we answer basic questions such as how long do they have to maintain their sites? Basic design guidelines? documentation? other standards?

- Question 17 asks responders to describe their LCC network's current internal capacity/expertise to lead and coordinate data management within their LCC. Eleven LCCs said medium or high capacity. One might expect that every LCC that says that would be engaged with the DMWG and we know that is not happening.

- Questions 18 and 19 suggest current data management leadership is inadequate and there is a fairly favorable response to increasing Network-level leadership.

- LCCs can really make an impact on improving data management across agencies and even within agencies if they step out of the "project" box. For example, LCCs should consider better aligning data management strategies with regional and national partners. Arctic LCC (and other AK LCCs?) is implementing this through their work with the Alaska Data Integration Working Group. Linkages to the National Climate Change and Wildlife Science Center and National Science Foundation could be more formalized and pursued.
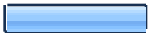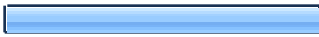
Results:

4. How would you characterize your current LCC DATA MANAGEMENT support?

		Response Percent	Response Count
we DO NOT have Any LCC DATA MANAGEMENT support		26.3%	5
we have Full Time LCC DATA MANAGENT support		5.3%	1
we have Part Time LCC DATA MANAGENT support		**42.1%**	**8**
other (see below):		26.3%	5

additional info: 10

- 3 part-time contributions (including 1 full-time GIS analyst)
- Support from USGS staff
- Current data management is minimal and spread across LCC staff. We are in process of hiring a full-time data manager.
- NWIF LCC did not receive project funding in FY12 and thus does not yet require data management capacity
- Less than Part Time; epsilon above 0. A P-T SCEP position oversees project tracking deadlines, etc.. We work with PIs to identify existing open access repositories and portals for hosting their data product. Not sure if that qualifies as 'Do NOt have any'.
- We have an agreement and in place and are moving forward with USGS LC Map/ScienceBase, but we do not have a data steward/manager as of yet.
- We have a GIS and Data Management Working Group
- Will bring on full time FWS employee DM specialist in Nov. Sci Coord has been handling up to now.
- We have a new STEP with some applicable skills, but he only works 10 hours per week and has other important duties.
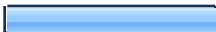- Part of duties of Geomatics and Advanced Applications staff
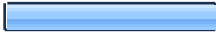
5. Describe your current LCC Full Time Equivalent (FTE) support dedicated to DATA MANAGEMENT: This includes government employees, contractors, and/or cooperators.

		Response Percent	Response Count
0 FTE		21.1%	4
part time - less than 1 FTE		**47.4%**	**9**
full time - equal to 1 FTE		5.3%	1
more than full time - greater than 1 FTE		15.8%	3
other (specify below)		10.5%	2

Other (please specify) 4

- No full-time person devoted solely to data management
- 3 to 5 positions distributed between USGS and TAMU providing partial support
- See note above re: project tracking deadlines. For your interests this should likely be '0 FTE'
- We have a working group - not sure how to quantify time for this

6. Please specify the types of current data management supported by your LCC (check all that apply): this question tries to separate out your LCC's capacity to support technical data activities versus your capacity to provide LCC data management LEADERSHIP AND COORDINATION both within and across LCC's.

		Response Percent	Response Count
none		31.6%	6
federal employee - data MANAGEMENT coordination and leadership		**36.8%**	**7**
other non federal or contractor employee - data MANAGEMENT coordination and leadership		15.8%	3
federal employee - TECHNICAL data and/or GIS support		31.6%	6
other non federal or contractor employee - TECHNICAL data and/or GIS support		31.6%	6
other - specify below		5.3%	1

Other (please specify)	2

- We don't have one dedicated person, but a working group comprised of federal, state, and non-federal members
- Person starting in Nov

7. Do you plan on a new hire OR contracting for full or part time DATA MANAGEMENT support for your LCC network in 2013?

		Response Percent	Response Count
yes		21.1%	4
no		**47.4%**	**9**
don't know		31.6%	6
	Please describe your 2013 plan including whether it will be technical or data management leadership/coordination support:		5

- We are exploring creating a shared position among multiple LCCs housed in the same building to act as a data management coordinator - working with PIs to identify existing resources/portals/outlets, develop their Data Management Plans, and identify strategic data management needs, etc. Having all or portions of staff from 4 LCCs co-housed has prompted this approach, as has the early development stages & limited funds of 3 of the LCCs. Our Steering Committee has decided it is more strategic and efficient to not attempt to become another data portal and instead to partnering with existing portals and repositories in the region (e.g., Geographic Information Network of Alaska, Alaska Ocean Observing System, etc.) to leverage existing architecture and expertise.
- We hope to either hire someone, contract, temp hires, detailee or have partner support...yet to be determined.
- The official position title is 'Cartographer' though we consider the role at Network Manager/Data Steward
- We are staffed up on the data management front.
- Our goal is to have 3 positions that would have a role in this realm: 1. Geomatics Coordinator - shared position employed by Mississippi State University (start date 9/17/12) 2. Advanced Applications Specialist - funded by LCC. Employed by University Louisiana - Lafayette; co-supervised by LCC staff and USGS partners. 3. Aquatic Habitat Assessment Coordinator - cost-share position with USFWS and LA DEQ to support aquatic habitat assessments; specialization in remote sensing.

8. Is your LCC network directly funding projects in FY2012?

		Response Percent	Response Count
yes		**89.5%**	**17**
no		10.5%	2
	additional information		1

- The LCC funded two, small projects with limited funds

9. How many projects has your LCC funded since your beginning through FY 2012?

LCC Name	Number of Funded Projects
Aleutian and Bering Sea Islands	**3**
Appalachian	**4**
Arctic	**50**
California	**25**
Caribbean	**NR**
Desert	**16**
Eastern Tallgrass Prairie and Big Rivers	**5**
Great Basin	**1**
Great Northern	**35**
Great Plains	**25**
Gulf Coast Prairie	**6**
Gulf Coast Plains and Ozarks	**33**
North Atlantic	**16**
North Pacific	**15**
Northwestern Interior Forest	**2**
Pacific Islands	**17**
Peninsular Florida	**NR**
Plains and Prairie Potholes	**27**
South Atlantic	**NR**
Southern Rockies	**18**
Upper Midwest and Great Lakes	**15**
Western Alaska	**22**
Total	**335**

10. How are you tracking projects (i.e. contracts, agreements, or internal projects)?
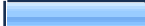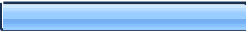
		Response Percent	Response Count
No tracking system		10.5%	2
Spreadsheet		**42.1%**	**8**
Database (MS Access)		10.5%	2
Database (Other)		5.3%	1
Other Application		31.6%	6

Please describe: 8

- Moving to web-based knowledge management system
- Electronic record via quarterly report.
- SharePoint
- SharePoint interface to a database originally developed by Arctic LCC before they created their new system.
- LCC subcontracted to WMI for oversight of non-technical aspects of projects.
- Project database on CA Climate Commons and available through the CA LCC website
- Custom-written Project Tracking System using open source software
- under development

11. If you fund projects, do you require standard "data deliverable specifications" or "data management plan" for each project as part of your agreement or contracts? "Data deliverable specifications" include specific data related requirements that you require from your cooperator as part of your contract or agreement and could cover a broad range of topics such as records management, data sharing and access, field data collection, spatial data and database design and management, data documentation, analytics, reporting, web site development/management, and ethics. A "data management plan" would include detailed data related specifications for a project.

		Response Percent	Response Count
we haven't funded projects		5.3%	1
yes		21.1%	4
no		**36.8%**	**7**
partly, but not comprehensive		**36.8%**	**7**
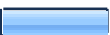
additional info | 9

- We do not have standards in place but are starting to formalize our requests for data deliverables (see below)
- Not currently, but this will change.
- require data as project-specific deliverable
- Not applicable to the projects we funded
- Started requiring DMPs with FY12-funded projects. Currently using DMP template developed by NCCWSC with expectation that we will modify as we gain experience & learn of others' efforts.
- We haven't yet fully developed a plan, but we do require data deliverables
- Specification requirements initiated in FY12
- Will start requiring compliance with National LCC Data Management Guidance in FY 2013
- but we really should

12. To the best of your ability, rank the overall quality of the data deliverable requirements associated with your projects' contracts or agreements.

		Response Percent	Response Count
not applicable		10.5%	2
excellent		0.0%	0
good		26.3%	5
fair		**31.6%**	**6**
poor		15.8%	3
don't know		15.8%	3
	additional info		3

- Just sent out first round of required DMPs; still awaiting receipt and review of them.
- We won't receive deliverables until next year
- earlier projects (2010-2011) didn't specify, newer projects should adhere to Alaska Data Integration Working Group standards, which are still under development

For those projects that your LCC has provided DIRECT financial support, select those informatics deliverables that have or are being generated as a result of your LCC funding (select all that apply - one project could deliver many of these products):

	Response Percent	Response Count
not applicable	5.3%	1
project reports	**89.5%**	**17**
specific best practices recommendations including guidelines or how to do something better/cheaper	47.4%	9
specific policy recommendations	15.8%	3
spatial databases (GIS layers, GIS analyses, etc)	78.9%	15
non spatial databases or spreadsheets (MS Access, Excel)	68.4%	13
paper or electronic maps (do not include overview or orientation maps)	57.9%	11
remote sensing products (classified or analyzed imagery, remote sensing image acquisition)	47.4%	9
field data collection (e.g. GPS, digital photos, field forms, vouchers, etc)	57.9%	11
web application - have strengthened or improved an EXISTING web site (s)	42.1%	8
web application - NEW data clearinghouse	36.8%	7
web application - NEW comprehensive information clearinghouse for a geograpic area	31.6%	6

- Not sure if we have funded actual field data collection. We are funding a website that ultimately is intended to become a clearinghouse for data but is in its early stages.
- Summary time x space reanalysis data sets from detailed storm surge modeling.
- LC MAP, as a web application, focuses on feature and coverage services but it does generate map services too.
- We have funded the development of an Information Management and Delivery System that doesn't serve as a data clearinghouse, but facilitates locating data that is available.

14. Has your LCC network developed or adopted written data management policy, best practices, or guidelines that can be used for projects that have data related deliverables?

		Response Percent	Response Count
yes		26.3%	5
no		**47.4%**	**9**
partly		10.5%	2
we are currently developing		15.8%	3

	please describe:	8

- see #15
- The NWIF LCC Steering Committee has had conversations about a future data management policy or plan. The idea is to have a plan in place before the first funding cycle for this LCC.
- Our RFPs & agreements include generic text (not detailed) regarding data sharing. We are reviewing the 'best practices' guidelines coming from the LCC Network Data Management Working Group and the Interagency Data Delivery Standards and Template for potential adoption/use.
- Yes, this calendar year.
- Will be substantially revised for FY13 to better align with LCC Network DM Best Practices.
- Will start requiring compliance with National LCC Data Management Guidance in FY 2013
- In the works soon.
- we have a data sharing policy, and are developing a generic data management plan that can be customized for each project.

15. If your LCC uses ANY written data management policy, best practices, or guidelines, please identify what references or document(s) you are using and their source. As an example, if your funded project results in the development of a public web application, then describe what references or resources you would use to define specifications and requirements for that public web site.

	Response Count
	10

- We have not formally adopted written policies, but we have begun review and inclusion of some best practices in our project RFPs/awards. Specifically, we have been referring to the draft LCC Data Management Best Practices and FWS Interagency Data Delivery Standards and Specifications Template. We also have been evaluating the Climate Science Center metadata standards.
- LCC Network Data Management Working Group Best Practices guidelines; Interagency Data Delivery Standards and Template (U.S. Fish and Wildlife Service. 2012. Data Delivery Standards and Specifications Template. USFWS, Pacific Southwest Region. Sacramento, Calif. 92 pp. including appendices).
- In January, 2012, the GPLCC Steering Committee agreed to adopt the recommendations outlined by the National Data Management Working Group.
- We adopted the guidelines of the National LCC Network.
- LCC Data Management Best practices; NCCWSC data standards and guidance; DataONE Data Management Plan guidance
- Our policy based on GNLCC policy so same sources as that one.
- Will start requiring compliance with National LCC Data Management Guidance in FY 2013
- We will likely reference the Best Practices Guide being developed by the data management working group.
- Arctic LCC data sharing policy

16. Is or has your LCC network directly funded/supported a project(s) to improve collaborative interagency data management that has DIRECT AND BROAD NATIONAL BENEFITS across networks and the US?

		Response Percent	Response Count
yes		36.8%	7
no		**57.9%**	**11**
maybe		5.3%	1

Identify Project(s) by name: 8

- LC-MAP implementation, ~ 30k to USGS Data Mgt portal user's focus groups to EcoAdapt, ~20k. Transboundary data workshops
- OK landcover project and gulf coast- wide sea level rise project.
- LC Map/Sciencebase...Dependent upon whether or not adopted by others...
- LC MAP
- National catalog
- Great Lakes Information Management and Delivery System
- Development of our Project Tracking System has the potential to benefit management of Projects throughout the network.
- Southeast Conservation Planning Atlas

17. Describe your LCC network's current internal capacity/expertise to lead and coordinate data management activities within your LCC.

		Response Percent	Response Count
none		10.5%	2
low		21.1%	4
medium		**36.8%**	**7**
high		21.1%	4
don't know		10.5%	2

additional info: 3

18. How important is it for YOUR LCC network to have your own FULL TIME DATA MANAGEMENT leadership, coordination, and support?

		Response Percent	Response Count
no local LCC network data management support/coordination needed		0.0%	0
low need		15.8%	3
medium need		26.3%	5
high need		**47.4%**	**9**
I have no opinion		10.5%	2
	additional info		6

- Currently we do not need additional full-time support. However, our needs will likely be increasing as additional projects deliver data.
- There is interest for NWIF LCC to serve as a data clearinghouse that spans the US-Canada border. As future project funds become available, the need for a FTE data manager will increase.
- too early to tell for our LCC
- Personally, I see this as a high need. It was identified as such in our Science Needs workshop. We'll not take action on this, though, until we have progressed further in developing our Strategic Science Plan (later this winter). Our Steering Committee recognizes this need but have not yet developed a strategy for addressing it.
- We haven't determined this yet, but I suspect it will become more important in the next couple of years
- I'd rather have a shared group of staff working across several LCCs

19. How important is it for the NATIONAL LCC program to provide full time DATA MANAGEMENT leadership and coordination?

		Response Percent	Response Count
no national level data management/leadership support needed		0.0%	0
low need		10.5%	2
medium need		31.6%	6
high need		**42.1%**	**8**
I have no opinion		15.8%	3

additional info 7

- This topic needs more discussion - cannot answer at this time.
- Welcome suggestions and leadership in data management
- It might make sense to have this coordinated at a higher level, rather than inventing 22 new wheels
- I see this as a key 'technical guidance' issue that a national-level position could help provide. All LCCs will face the need for this; most partners do not adequately address it; many of the needs can be most efficiently addressed through creation of uniform tools shared & distributed across the networks; most LCCs do not feel they have the funding to create such positions (yet).
- I'm not sure what this position would accomplish without more information.
- I'm confident the Working Group can manage & guide LCC Network coordination
- it will increase in out years...let's train up some local folks on what we need right now.

20. Provide additional comments or recommendations on the topic of LCC Data Management/GIS at either the local LCC or national level LCC:

Response Count: 4

- We believe continued dialogue and coordination on data management is important, while allowing individual LCCs flexibility to meet the needs of their partners. We will continue to be engaged on this topic.
- It would be interesting to explore the idea of a National Data Management Coordinator, especially if this position could create a data portal or database that could host data from across the Network. This could replace the need for all LCCs to have a full-time data manager.
- Similar answers apply to GIS technical capacity and, more broadly, biometric/statistical technical capacity. The field level partners recognize these needs, the higher level managers often do not. So far I've only seen real progress in addressing these issues occurring at the fully-funded, 'first generation' LCCs. One obvious strategy is for the National office to help 'generalize' the LCC-specific project tracking & data management tools that have been developed for distribution to and use by all the LCCs.
- It's important to discuss options and alternatives for meeting this need with a broad group of representatives given the differing places we all are with data management. This is a hard and complex to deal with at a national scale!

Data Management Survey Respondents:

19 LCC Networks Responded to this Data Management Survey

Individuals who responded:

Scott Schwenk	North Atlantic LCC Science Coordinator
Tom Miewald	North Pacific LCC Data Manager
Bruce Moring	USGS Shared Science Coordination Support
Deanna Spooner	PICCC Coordinator
Amanda Robertson	Northwest Interior Forest Science Coordinator
Douglas Burn	Aleutian and Bering Sea Islands Coordinator
Joel Reynolds	Western Alaska Science Coordinator
James Broska	Great Plains LCC Science Coordinator
Genevieve Johnson	Desert LCC Coordinator
Todd Hopkins	Great Basin LCC Science Coordinator
Sean Finn	Great Northern LCC Science Coordinator
Mike Olson	Plains and Prairie Potholes LCC Science Coordinator
Bridgett Costanzo	Appalachian LCC Science Coordinator

Rebecca Fris	California LCC Science Coordinator
John Rice	Southern Rockies LCC Science Coordinator
Brad Potter	Upper Midwest and Great Lakes LCC Science Coordinator
Greg Balogh	Arctic LCC Coordinator
Glen Salmon	Eastern Tallgrass Prairie and Big Rivers LCC Coordinator
John Tirpak	Gulf Coast Plains and Ozarks Science Coordinator