



**BCoN Workshop
Addressing Legal Issues Involved in Digitized Collections:
The Nagoya Protocol as a Test Case**

**Working Group Discussions on the Nagoya Protocol and Its Relevance to the Biocollections
Community [Day 1, 2 hours]**

**3 Working Groups: Biodiversity Informatics
Collections
Research**

Biodiversity Informatics Working Group

John Deck, University of California, Berkeley

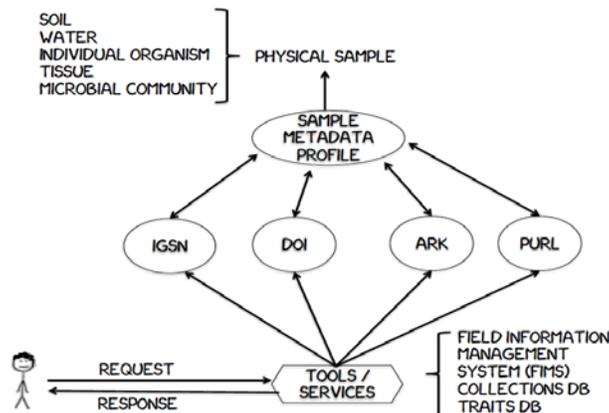
Paul Morris, Museum of Comparative Zoology, Harvard University

Gil Nelson, iDigBio, Florida State University

Linda S. Ford, Museum of Comparative Zoology, Harvard University

1. What is the role of digitization to meet the needs for Nagoya compliance?

- Yes, we need data digital to comply with Nagoya. Critical to distinguish between physical object, metadata about physical object, and analysis based on metadata or physical object.
- If on a loan by loan basis we have to create an MTA, what drives them: what is the risk of transferring or not transferring documents of control and what is the risk of receiving institutions using data incorrectly. What can be done with a research product? What are the limitations?
- Centralized store of MTA or MAT, with a DOI and attached to the specimens. This would be: create a standard for a sample metadata profile. E.g., the following figure demonstrates how this could work (from a presentation by Deck at TDWG, 2015):



- MATs will need to address both digital and physical object limitation

2. How does the newly created categories of “Permits” (and other Legal Documentation) assist the digital process?

- Need an ontology of permits that will help create and clarify concise community standard vocabularies. Note, this is a larger exercise requiring data driven tests, etc... to make sure these are correct.
- PLEASE NOTE: John completed the permit ontology (well, a VERY ROUGH first draft) BEFORE dinner on Tuesday evening :) see <https://github.com/jdeck88/permit-ontology>
- Will require inclusion of both digital and physical object sections.
- For the community standard vocabulary, we should work with the Convention on Biological Diversity (this is a UN environment program) to develop clearer definitions of permits.
- The vocabulary needs to be managed by an agency with clear governance and transparent processes. Include a system for versioning and the ability to modify and update terms.

3. What digital resources are needed to help the target audience with their legal compliance issues?

- What does metadata need to say for it to be useful by institutions who care?
- WHAT institution does permit apply to? WHO cares about the various terms on sample. Thus, we need ability to layer permit requirements per sample for chain of institutions.
- How to verify a chain of signatures?

- We need centralization to some extent. Even if it is distributed we need centralization to authenticate the distributed store.
- Potential communities to interact with: Library Community, Legal Community, Blockchain community?, Construction Permits?, Patents?, Food Safety?

4. What leverage does a collection have to ensure legal compliance by the specified target audience?

Is there a digital component to this leverage?

- Condition of publication
- Funding (NSF rules)
- Ability to continue collection in country.
- Collection provides a benefit to end-users that there is proof of compliance with country of origin laws.
- Trust arrangement --our goal is just to make more clear.
- Distributed gatekeepers are the University's office of technology and development.

Technical challenge: how to manage multiple overlapping and potentially mutable contracts on a sample by sample basis in a decentralized environment?

- Institutions need to manage risk while also continuing to share physicals samples and manage

Collections Working Group

Mariel Campbell, Museum of Southwestern Biology
 Bill Moser, Smithsonian National Museum of Natural History
 Marcy Revelez, Centers for Disease Control & Prevention
 Michaela Schnull, Harvard University Herbaria

1. What is the role of digitization to meet the needs for Nagoya compliance?

- Organize, track and allow dynamic retrieval for decision making
 - Streamline, expedite and reduce workload; e.g., autopopulate fields for MTAs
 - Track third party restrictions; link to specimen records, accession and loan forms
 - Track temporal component
- Do we really have to digitize the file cabinets? How do we know their contents unless we make them searchable by digitization.

- What do we mean by digitization? Varying degrees of understanding within the collections community, from just digitizing the image to having clean data in searchable fields to transactions, permits digitized; ISBER has a best practice for documentation to use as a model
- Digitization allows retrieval of information for decision making
- Allows for populating documents with data, set up MTA terminology and terms in advance
- We need to standardize terms, map categories

2. How does the newly created categories of “Permits” (and other Legal Documentation) assist the digital process?

- Standard terms provide consistency, discoverability
- Allows for determination for access and use
- Allows for tracking of legal compliance, ownership
 - Monitor trends
- Helps to draft documents

3. What digital resources are needed to help the target audience with their legal compliance issues?

- Include the ability to track temporal changes to ongoing agreements; create new permit fields for renewals
- ABS Clearing House:
 - Legal advice on loan conditions, MTAs
 - help with Certificate of Compliance
 - Communication with Party focal points

4. What leverage does a collection have to ensure legal compliance by the specified target audience?

Is there a digital component to this leverage?

- Accessioning
 - Refuse accessions, shipments without permits
 - Withhold catalog numbers for publications
 - Assist donors, collections staff with compliance for legacy collections, private donations, transfers
 - Blacklist: Failure to submit specimens as claimed or required, journal editors,
 - GenBank require and verify

- Loaning/Sharing/Use
 - Track non-compliant agents; blacklist; refuse to loan
 - Cease and desist orders
 - Charge a non-compliance fee?
 - Work with journals or other data aggregators- refusal to publish
 - Real Goal: Facilitate Compliance
 - Educate
 - Standardize
 - Develop websites
 - Develop checklists
 - Develop FAQs
 - Training
 - Certification of compliance
 - Road shows
 - Work with journal editors
 - Work other aggregators (GenBank)
 - Influence best practices
-

Research Working Group

John Bates, Field Museum

Carla Cicero, Museum of Vertebrate Zoology

Paula Mabee, University of South Dakota

Breda Zimkus, Museum of Comparative Zoology, Harvard University

1. What is the role of digitization to meet the needs for Nagoya compliance?

- Viewpoint from the standpoint of researcher
- Researcher wants access and use, fewer people doing field work and collecting the material
- Different sides to issue:
 1. Researchers who are collecting material
 - a. Researchers who bring material back to their home institution
 - b. Researchers who leave material behind - many countries aren't equipped to house and curate material, so one part of ABS is to serve as a repository for material; view it as a benefit to the country

that you are archiving and curating the material (often it's split between countries)

- Do not necessarily want to distinguish these two cases (a) and (b); researchers should be depositing material in their collections, otherwise end up with 'orphaned' collections
- As a researcher, long for world where permits are DwC standardized

Use cases:

Pre-expedition phase

- Need to know the rules but does this that have anything to do with the collection?
- Link from database higher geography to ABS Clearing-House country; necessary or go straight to ABS-CH?
- Make permits from other researchers within the institution available
 - Problem: institutions do not typically share permits - often under lock & key, which doesn't help the broader community.
- Is there a module of the database that is pre-accession? It's all up to you as a researcher, and you are on your own except for a checklist from the collection.
 - Arctos 'projects' are used for loans and accessions - build on this to track pre- and post- expedition documentation?
- Pre-expedition Fieldwork checklist (<http://spnhc.biowikifarm.net/wiki/Permitting>)

Post-expedition phase:

- Accessioning: Give excel spreadsheet to researcher to fill out; this is uploaded in the collections database; tag every specimen that comes in with a particular permit?
- Need to upload the permits immediately on accession.
- Possibly a Post-expedition Fieldwork checklist?
- Do we need to add all or only Nagoya relevant permits to the accession?

Loans that include a material entity or derivative material from a collection

- Is material digitally accessible?
- Is it possible to develop blanket MTAs with countries so that collections can loan specimens?
 - E.g., Indonesia specimen: U.S. researcher collected specimens, not accessioned in Indonesia, and now (instead of an export permit), Indonesia granted a 'loan' to the researcher for two year...
- If there are MTAs - do we need to talk with the original country? Technically country of origin are the owners, and they have to be contacted each time to loan it out.

- USFW import permit relates to/restricts to noncommercial access (zero value) -- so how can U.S. researcher commercialize (and allow Nagoya benefits flow to the country of origin)?

Loans that include digital data (e.g., genetic sequence data)

- Standardized fields for tagging and viewing restrictions associated with accessions - annotating specimens re: restrictions on use
- Important to educate community on what the requirements are; minimum requirements and guidelines; even if there isn't an initial intent to deposit them in an institution, that might be something that happens down the line
- Gray area between (e.g.) genetic sequences and specimen - are genetic sequences additional metadata about the specimen, i.e., 'fact' or 'creative work'?
- U.S. operates on open data framework; what are we willing to accept and what aren't we going to accept, dictated from other countries
- Need different flags on specimens for different categories of uses (e.g., flag specimens that require consent prior to third party use)

2. How does the newly created categories of "Permits" (and other Legal Documentation) assist the digital process?

- Incorporate into pre- and post-expedition checklists
- Helps to educate researchers about all of the different kinds of permits that they should be thinking about (historically, it was pretty much limited to collecting and import/export)
- Permit fields could imply downstream consequences to inform users as to whether a specimen and its derivatives are available for loan or not.

3. What digital resources are needed to help the target audience with their legal compliance issues?

- Pre and post-expedition checklists (incorporating things like permit vocab)
- There are resources via SPNHC, GGBN, CETAF and other groups, but are they reaching researchers?
- A multi-faceted approach, including webinars, bulleted checklist or "Nagoya for Dummies"
- Need to better advertise the availability of resources to the research community (scientific meetings, publications, websites, etc.)
- Need to spin on the positive (e.g., capacity-building, open access, biodiversity conservation) - sell success stories (case studies)

4. What leverage does a collection have to ensure legal compliance by the specified target audience?

Is there a digital component to this leverage?

- Summary phrase: "Vague but comprehensive"