Workflow Detail: Pre-digitization Curation (for flat sheets and packets)

Module 1 Pre-digitization curation	Module 2 Imaging station setup/camera	Module 3 Imaging station setup/scanner	Module 4 Image capture

Module 5 Image processing	Module 6 Data capture	Module 7 Data enrichment
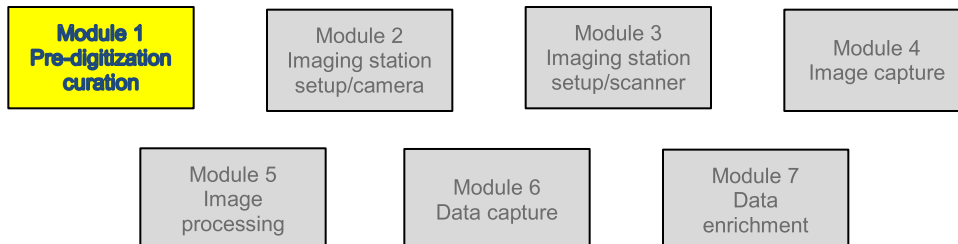
Module 1: Pre-digitization Curation Task List

Task ID	Task Description	Explanations and Comments	Resources
T1	Apply storage locator barcodes to storage locations (rooms, cabinets, shelves, folders, drawers, etc).	Most useful when systematically digitizing an entire collection. Otherwise potentially helpful with herbarium inventory. May be less helpful for collections that are digitizing in random order or only portions of the collection related to specific projects, or with significant separation between the pre-digitization curation, databasing, and image capture modules.	Barcodes, QRcode, DataMatrix.
T2	Select specimens to digitize.	For herbaria, this often includes all specimens. Where this is not the case, selection should follow the institution's pre-determined digitization policies or project management plan.	Digitization policy manual or project management plan.
T3	Associate/insert machine readable barcodes/documents with/into folders.	Some institutions create machine readable documents to gather data at the cabinet and/or folder level. Documents might contain such information as family, higher geography, and current identification ("filed-as name"). These data will be read and associated with individual collection records in Module 4, T1 or Module 7. Tasks T2 or T3 might also include determining whether specimens are out on loan or otherwise removed from cabinets or folders. This might be done either by physical tracking (e.g., inserting markers within the cabinets) or by electronic database loan tracking. Since such specimens might be removed for an extended period, an efficient strategy for	QRcodes, DataMatrix, 1D barcode, or OCR-readable documents for insertion into specimen folders.

		tracking their return and ensuring their re-insertion into the digitization workflow should be designed and documented. It should be noted that an increasing number of institutions have alleviated the need for loan re-insertions by digitizing specimens prior to fulfilling loan requests.	
T4	Identify location of specimens.	Selected cabinets or folders can be flagged for easy retrieval of the specimens. Some institutions, e.g. those of the New England Herbaria TCN, record and estimate inventory at this point (e.g. this cabinet contains 36 inches of sheets of this taxon at 5 specimens per inch).	Flagging accessories.
T5	Pull specimen folders from cabinet.	Further decisions and filtering might be applied here if policy or project management plan stipulations limit the number of specimens to be digitized per taxonomic, geographic, or other unit.	Digitization policy manual or project management plan.
T6	Curate collection in place, including nomenclatural standardization and annotations.	This task might be accomplished at a variety of stages, including as a separate iterative module at the beginning of pre-digitization curation or following T11. Whether the steps to achieve the present task are undertaken as a single, coherent module or distributed to two or more tasks within the pre-digitizaton curation task cluster, the steps to be accomplished necessarily include • removing the specimen from the folder, • determining if the specimen label is consistent with the folder "filed-as" name, • identifying and annotating the specimen, including routing the specimen to a taxonomist or other competent personnel, • re-inserting the specimen into the folder. It should be noted that specimens routed to a taxonomist might be removed from the active digitization workflow for an extended period to allow identification/annotation activities to be completed, and may necessitate the design of an efficient re-insertion strategy for returning these specimens to the workflow.	Workspace Taxonomist

T7	Remove specimen from collection and bring to imaging station area.	Usually involves several to numerous folders, depending upon storage space at imaging station.	Cart.
T8	Document/flag location of removed specimens to ensure accurate return of the specimen to the appropriate storage location.		Flagging accessories. Collection filing policy.
T9	Separate specimens that need barcodes/imaging from those already barcoded or imaged.	Some institutions have previously barcoded and/or imaged specimens from prior projects.	
T10	Conserve (or re-route for repair or freezing) specimens too damaged or infested for immediate imaging.	This step may be accomplished in concert with task T6, following T11, or as a noncontiguous independent cluster preceding T1 for families or other groups for which a large proportion of specimens are expected to need conservation prior to digitization (some institutions report as much as 50% of specimens for some groups need conservation). In these cases, a sub-module devoted to conservation and repair activities (not itemized here) would be needed. It should be noted that specimens routed to the conservation sub-module from T6, T10, or after T11 might be removed from the present workflow for an extended period to allow conservation activities to be completed, and may necessitate the design of an efficient re-insertion strategy for returning these specimens to the workflow.	Repair tools and accessories. Conservation protocols/ policy.
T11	Apply Barcode with Accession/Catalog/ Barcode number to individual collection objects (if not already barcoded).	Depending on protocol, application of barcodes is sometimes accomplished earlier as an independent iterative process.	Barcodes.
T12	Create skeletal database record.	If included, this task may be accomplished by scanning the barcode value into a new database record and optionally populating the record with a select set of skeletal data that might include any or all of the following: taxon name (usually the "filed as" or "filed under" name), collection date, collector name, collector number, and a broad geographic	Barcode scanner, open database

		description (e.g., country and/or state), the latter to aid in prioritizing specimens for data entry or further digitization activities.	