US Animal Telemetry Network
Steering Group Meeting SG-8

December 10th, 2020
Meeting Minutes

I. Co-Chairs Call the Meeting to Order (B. Woodward, S. Simmons)

- B. Woodward welcomed steering group members and thanked them for the continued support of the ATN.
- S. Simmons, the new ATN co-chair, opened the meeting and offered the sponsors opportunity to comment.

II. Voting Member Input

- M. Weise noted he has not been most involved in DAC activities. While he has been busy since the last SG meeting, he commends the progress others have made.
- S. Hayes thanked and welcomed all members for attending the meeting.

III.   ATN Updates (B. Woodward, Co-Chair ATN Steering Group)

A. GTS Project for Animal-Borne Ocean Sensor Profiles

- The GTS project will ingest real-time oceanographic profiles from tags, apply real-time quality control, and create the uniquely formatted BUFR messages to push data to the NOAA Buoy Center and in turn onto the GTS. This project is going very well; the quality control capabilities are in place and the BUFR template is currently being implemented. The project development should be finished by late February and be ready to go operational in March.

B. AniBOS – Organizing Meeting held Nov. 18-19, 2020; Steering Committee elections December.

C. AniBOS is an emerging international network within the GOOS structure. The first organizational meeting was held in mid-November, and Steering Committee Members were put up for election in early December. Bill and Sam were both candidates, results are to be determined. AniBOS is an international consortium which, among other things, will apply the capabilities of the ATN GTS Project, and seek to streamline the capabilities on a global level. The project will aggregate oceanographic profiles from animal tags, quality control and insert them onto the global telecommunication system (GTS) for global and regional model assimilation. **ARGOS Fees Program**

- We now have a total of 41 programs with a commitment of 1600 tags. Not all tags are transmitting at same time since they are field-season based. B. Woodward thanks everyone who has joined in that program. The "burn rate" for this program is an average of $11K per month. This will leave enough money (if the average is sustained) to carry through 2021. They are hoping to get more tags in the water, which could possibly use up the funds sooner, and we need to be prepared to handle that. B. Woodward and M. Weise can discuss this issue offline.

D. ATN Asset Inventory

- ATN gathered information from the community to display on the web and portal where satellite tagging assets are and where acoustic tagging assets are. The effort was suspended during COVID. Megan Treml of SECOORA is helping move forward the inventory. There will be a re-assessment in January of 2021 to determine if we need to go back to PIs and request more information and update the numbers in the report.

E. IOOS Regions 5 year proposals, FY-2022-2026.
- The eleven IOOS regions are in the process of submitting five-year proposals to the IOOS Program Office. The regions have to re-compete their grants every five years. ATN is trying to insert itself into some of those proposals. The proposals are due at the end of 2020, and will then go through a merit review process. Awards will be granted mid-2021.
    - M. Weise asked about the timeline for tier-1 and tier-2 plans. B. Woodward responded that we are unlikely to know if ATN made it into tier-1 or tier-2 plans until March or April.
    - M. Weise asked about for information on the size of the budget—are the proposals drawing from a smaller or larger pot this year? B. Woodward replied that the total amount of money for the IOOS Program Office regional line item is about $30 million for all regions. There may be increases based on FY21 enacted budget. The likelihood of getting increases is unknown. Each of regions is putting in tier 1 (keeping the lights on), and tier 2 (what we would like to do if possible). B. Woodward noted he is optimistic that the ATN will benefit from these proposals.

F. Workshops and Workshop Reports
- West Coast ATN-MBON-OTN Report Completed. Available at https://ioos.noaa.gov/project/atn/ under the 'Documents' tab. The report contains a lot of information and may serve as a reference for West Coast biological observations.
    - M. Weise recognized the report for the broad and important information contained in the report and commended Bill for his efforts, which benefited ATN and beyond.
- B. Woodward is working on the NERACOOS report. The other outstanding workshop will be for GLOS. B. Woodward has provided some money for this workshop, and it will likely be technical (as opposed to stakeholder-driven).
- Sheri and Stephanie have been helping Bill summarize regional and national-level findings and recommendations. They are now focused on putting together a one-page infographic to highlight the national priorities.
- *Discussion:* M. Weise asked if there are any major updates on the integration of ATN, MBON, and other biological observations. B. Woodward replied that he recently learned from the CeNCOOS team that there are reinvigorated efforts to create an integrated West Coast biological observing system. Also, within the IOOS Program Office, there is continuing desire to unify biological observations in the U.S. There are conversations with others in NOS that receive and contribute to this type of information, so Bill and others in the Program Office are working on a biologically-based NOFO for FY2022-23, which would help unify ATN and MBON. It is a slow process, but it is moving forward.
- K. Holland asked if there is an automated process in place whereby tags are associated with at GTS/WMO number? And can you get a retroactive GTS number? B. Woodward answered yes, you can get a retroactive number. To the other question—the ingestion capability does exist. The "Holy Grail" of getting information out on a global scale through the global telecommunication system is having a BUFR template (which is simply a unique format required for the GTS). The template exists, it just needs approval from WMO. Hopefully we will be putting data up by early summer.

G. Operational DAC (M. McKinzie)
- Current status of the ATN DAC
    - 131 Projects Registered
    - 89 Discoverable in Portal

- The discrepancy between projects registered and projects discoverable is due to a few satellite projects that are missing data/metadata, and some historical projects that were manually uploaded and require more time (28 projects).
- The remaining projects not in Portal are either acoustic, Dtag, CATS or code/tool based projects and unable to be push to Portal at this time (14 projects).
  - 54 Species
  - 2894 Tag Deployments
  - 20 Datasets DOI minted and Archived at DataONE
    - - 1 pending
- ARGOS Fees Program
  - 41 programs registered, and agreed to support over 1600 tags
- M. McKinzie introduced BioTrack: A Collaborative, multi-species synthesis project that seeks to assess and monitor hotspots of marine megafauna biodiversity by linking satellite telemetry data with remotely sensed environmental data on multiple EOVs and geographic "seascapes".
  - Led by Dr. Neil Hammerschlag & PhD student Chelsea Black, Uni. Miami-RSMAS
  - So far, they have recruited 18 collaborators, 15 projects, 309 deployments and 13 species
- ATN Data Workshops: Southwest (Aug 26, 2020)
  - Held 2-hour webinar & on-line one-on-one data sessions
  - 25 webinar participants from NMFS, Navy, USGS, BOEM, MBARI, CeNCOOS, Stanford, CSULB, UC Santa Cruz, San Jose University, Marine Ecology & Telemetry Research, Upwell, SEA, Inc.
  - 4 researchers scheduled virtual data sessions in August and September of 2020
- ATN Data Workshops: Upcoming
  - Northwest and Southeast workshops are planned to be virtual in 2021
- Portal Updates—Completed
  - Updated deployment labelling scheme fixed 'Ugly' IDs to help researchers find tags easier.
  - Added 'Animal ID' to deployment metadata
  - Added new search parameters, can now search for an ind. deployment by either its PTT/device ID, deployment ID or animal ID
  - 2-week delay for visualization of R/T positions for sensitive species (currently being done with Hawaiian Monk Seal Tags)
  - ALL layer updates to help with performance
- Portal Updates—Upcoming
  - Timestamps displayed in UTC instead of user local time
  - Foie Gras, option to view both 'raw' and 'smoothed' tracks. Should be up and running soon
  - Animal movement and physical data integration from IOOS data sensors
- Priorities for January-May 2021
  - Develop national data aggregation capability through continuous data integration with tag manufacturers and other data sources, make data publicly-available in the ATN Data Portal

- Develop the capability to deliver real-time ocean profile data from animal-borne sensor tags to global (and regional) weather and ocean forecasting centers via the WMO GTS
- Develop data synthesis tools including integration of reproducible state-space model functionality into the ATN DAC (Foie Gras)
- Develop optimized ingestion pathways for new, sophisticated multi-sensor tag types (e.g. Dtags) and acoustic telemetry. M. McKinzie would like to make this a priority for the next several months and coordinate with SG members to test.

- *Discussion:*
  - M. Weise thanked M. McKinzie for her work and the presentation. Additionally, he asked about the status of the historical data projects. Given delays to fieldwork because of Covid, is there any ability to shift staff work to addressing historic data queue? M. McKinzie has been discussing with Bill and Axiom, though nothing is finalized. There are options being considered.
  - B. Woodward added that if there are Navy-funded projects that really need to get out, let the ATN know.

IV. Review of Actions from SG-7 and On-Going Activities
Note: Review of Actions was postponed in order to keep the meeting on schedule. SG members should send any updates on assigned action items to Bill, Sam, or Stephanie.

1. Complete spreadsheet to organize in-progress projects and send out to SG members. The spreadsheet will ask members to indicate the key funders and provide points of contact that M. McKinzie can reach out to for information on projects (Megan) **Status:** Completed spreadsheet. Data collection from agencies on-going.
2. Incorporate J. Young's comments into policy document and send out for final review (Bill, Joy) **Status:** Ongoing – N/A
3. Document the possibilities explored for alerts to DAC users when downloaded data has been altered. Send to SG members (Megan) **Status:** Ongoing
4. Initiate conversations with Gulf Coast PIs to facilitate more engagement (Jim) **Status:** Ongoing
5. Begin strategizing the next 5-year ATN plan, given that the current plan ends in 2021 (Bill) **Status:** Completed
6. Craft strategic plan/procedure to re-evaluate funding each fiscal year, including how to use limited funds for supporting the infrastructure (Bill) **Status:** Ongoing
7. Review new package (ADEPTHER) for data visualization, funded by NPS (Kristen, Megan) **Status:** Ongoing
8. Determine future funding opportunities through identification of agency needs to achieve funding goals. Develop 1-2 pager defining importance and options for funding, including 1) baseline operations, and 2) ATN project/topic support (Mike, Randy, Kristen Bob) **Status:** Ongoing
9. Determine which sections of Data Policy Document should be pulled out to support the needs of the acoustic data community. Then, discuss with general counsel how to ensure data policy is in line with federal law. (J. Young, B. Woodward) **Status:** Ongoing
10. Discuss federal data policy requirements to ensure data policy is in line. Seek guidance from general counsel (B. Woodward, J. Blythe) **Status:** Ongoing
11. Coordinate with B. Woodward to show support for inclusion of ATN activities in IOOS Regional Association proposals (All SG Members) **Status:** Ongoing

V. ATN Team Updates
A. Tags for Researchers (R. Wells)

Sub-group Members: Randy*, Matt, Greg, Meg

- First task was to change the name of the document to "Tracking Gear for Researchers". MBARI made available $65K. The group considered small grant program to distribute tags to needy researchers, but this method was deemed an inefficient and poor use of funds given the required indirect cost rate. The group decided a more effective use of funds would be to create a repository of equipment that can fill gaps where needed, providing utility for more people. The idea is that Megan would purchase equipment (equipment TBD), which will sit in a repository (Randy has offered his lab in Florida to serve as the repository) and be distributed to researchers as needed. Bill can help provide guidance on who needs what equipment and when. ATN will need to set up agreements for length of borrowing periods—one year was suggested. For example, researchers may borrow a Vemco receiver for one year or until they are able to replace their own equipment. Loaning may be conditional that data is provided to DAC to help benefit all of ATN. R. Wells invites feedback on this idea.
    - o B. Woodward notes that one of the caveats would be that glitches can accompany a lending library. Fred Whoriskey (OTN) is willing to provide information on lessons learned to help avoid those glitches. ATN can try to schedule something offline with Fred.
    - o M. Weise provided support for the idea. Given Bill's departure at the end of 2021, it would be smart to leverage his connections and determine a path for getting the library online so the project can continue on. B. Woodward noted that IOOS would be in charge of setting up the lending library website.
- R. Wells and M. McKinzie added that the $65K needs to be spent by the end of May, but a specific list of items is needed for budgeting purposes by the end of January. R. Wells/M. McKinzie included a list of potential inventory and prices in his document. Input from others on inventory suggestions is needed.
    - o ACTION: R. Wells to send out an initial list of potential inventory, and ATN members should provide feedback before Christmas.
- J. Price offered a Goniometer receiver instrument and potentially other instruments to share with the lending library. R. Wells agreed they would like to pursue that. B. Woodward notes there may be updates that make this old instrument obsolete, but it is worth checking.
- M. Weise comments it would be nice to have a balance of satellite and acoustic instruments to support the different communities.
- S. Simmons supported the principle of requiring data for the DAC, but noted we will have to be careful about details of what data is required from what instruments. R. Wells agreed this is easier for the satellite instruments than for the acoustic, and notes that data could be required "as possible".
- M. McKinzie comments that MBARI does have some rules regarding what is considered capital vs. non-capital equipment and therefore whether or not overhead has to be factored in. Once we get ideas on the equipment we want, she can share MBARI's guide. There is a $5K minimum for instruments to be considered capital equipment. Even pieces of equipment that work together cannot be grouped together.
    - o B. Woodward asked M. Ogburn to distinguish between a couple instruments. M. Ogburn explained that the VR-100 is a deck box that is used with the VR-2AR. The VR-4 is a bottom-mounted receiver that communicates through an underwater modem with a surface system. The VR-2 acoustic-release receivers require a recent VR-100 that can transmit to them and trigger the acoustic release.

- o M. McKinzie played with the budget numbers to explore options. For example, the program could purchase one VR-100, one hydrophone, and either five or seven receivers (depending on whether or not a Goniometer is also purchased).
- o M. McKinzie also noted that she needs to check if the $65K could be used to help cover shipping to researchers. R. Wells comments that if not, shipping costs will have to be worked into an ATN budget somewhere.

B. **User Fees Approach for acquiring funds from Other IOOC Agencies (B. Woodward)**
   Sub-group Members: Bill*, Bob, Woody, Mike, Jim
   - B. Woodward explained the approach: When PIs submit a proposal, a data management plan should be included that uses the ATN DAC to process, display, and archive data. If that proposal is approved, the funding specified for data management is then provided to ATN DAC.
   - Moving away from "user fees" terminology is recommended. For example, "data management processes." The approach would help support operations and other core components. The idea is meant to augment operations, not support everything. The sub-group agreed this is worth pursuing. However, they also concluded that implementation will be successful only if the programs can convince agencies involved that data management capabilities of the DAC is valuable, and this is also communicated to funded PIs. This is a significant condition for the success of this project.
   - B. Woodward outlined what the initial step to document capabilities of the DAC would look like.
   - ACTION: A one to four-page document explaining the DAC and its function should be put together, specifically how the DAC capabilities would benefit funded PIs. In addition, it should be clear how the DAC compares to other services that exist. It would be critical to socialize this information with the agencies. If we are providing requirements to PIs, we need to communicate clearly what the costs and benefits are. Therefore, the ATN needs to clearly understand what the costs are. A cost schedule will have to be worked out with Axiom.
   - Will also have to figure out how to get federal money from agencies to DAC. This is always a challenge given some restrictions. No solutions yet, except that maybe the IOOS RAs could help simplify the process. We will need strong agency advocates to assist in socializing process and help come up with language that would require DAC funding in RFPs.
   - B. Woodward notes that the funds from this process are not intended to cover everything, and core support/funding will still be needed.
   - *Discussion:*
     - o J. Young clarifies that they have tried to approach researchers to include the ATN in proposals, and it hasn't been very successful; it will be good to try approaching to funders to add a requirement.
     - o B. Woodward agreed, noting the process will involve communicating the value of the DAC to both and getting researchers to include the right language in their proposals.
     - o S. Simmons notes that both approaches are important. It could also be a good way to expand opportunities coming into ATN. However, we can also communicate that researchers can still use the DAC when pursuing funding from other groups.
     - o M. Weise points out this approach may make researchers nervous, and suggested instead of reducing the PI budgets for tagging, convince funders that this is an added

expense. It will be important that everyone understands this so PIs don't feel like the rest of their budget will be affected.

- o W. Turner agreed that it should be both a top-down and bottom-up approach. Data management is integral and will hopefully become a norm with socialization.
- o B. Woodward asks non-federal SG members to chime in and comment on how they see this going over with researchers.
- o R. Wells agrees that the process makes him nervous, but he understands the importance and stressed the need to get funders on board.
- o G. Skomal adds that researchers are always being asked to share data, and the DAC gives them a good way to do it.
- o D. Smith notes that the Army COE is more focused on interior freshwater rivers. There isn't much telemetry in these areas. The COE isn't fond of funding things that they consider programs. It would be challenging to find the angle within the COE— not aware of people doing telemetry at all. Perhaps near-coastal telemetry would be of interest, and D. Smith is looking for areas with potential. There is a new project developing with the University of Maryland for FY22 that may include telemetry. He will try to keep the door open for opportunity.
- o K. Hart notes that USGS does fund extramural projects through a particular type of agreement. She still owns the data management plan in those agreements.

- M. Weise notes that the User Fees Program could help to fund core components, namely the Network Coordinator (Bill's position) and the Data Coordinator (Meg's Position). With Bill leaving at the end of 2021, the ATN needs to start looking at what level and type of person could step in. It would be good to have a plan in place by summer of 2021. M. Weise suggests forming a small group to explore options and engage with Bill, the funding agencies, IOOS program office, etc. M. Weise had a great conversation with Nick Rome of COL about the potential of running a contract through COL.
  - o ACTION: Put together a tiger team to start exploring a succession plan for the Network Coordinator position. Bill, Sam, Sean, Jim, Mike, and Meg volunteered.
  - o K. Hart notes that she is currently dealing with a lot of data management in her work. She is surprised more PIs are not involved with this issue. In a month, USGS researchers will be required to put a value on any publications they produce. Given the importance of valuing data produced, K. Hart suggests she could join the committee to start looking at the next steps for the user-fees approach.
- ACTION: Bill will follow up with the existing user-fees group (Bob, Woody, Mike, and Jim) to see who can continue.

C. **Preparing the Next ATN 5-Year Implementation Plan (J. Young)**
Subgroup-members: Joy*, Sam*, Stephanie, Mike, Bob, Sean
- J. Young discussed the draft outline for next 5-Year Implementation Plan. The group framed the outline from the last 5-Year Implementation Plan Outline. Key updates include:
  - o The old outline is pretty full with background information. Now, less background is needed, so much of the background was condensed and framed in the context of how telemetry science is changing and how the ATN is adapting.
  - o An overview of the current status of the ATN is provided. This includes network components, an explanation of the DAC, and a paired down data policy (could be attached as an appendix). This piece is clearly marked as a living document, since it would likely change faster than the implementation plan would.

- o Program goals: overall goals to support the mission statement of ATN, how to fulfill needs based on regional meetings, filling gaps in plans, and how ATN wants to play on global scale.
- o Operational goals: These can be filled out based on SG feedback and regional needs based on the regional needs. The thinking it what are our 5-Year goals, and how can we get there?
- o Final section on strategic plans: What would it take to maintain ATN in current form (including cost estimates), and what would it take to expand and fulfill objectives?
- The sub-group would like to get feedback on the outline. The next step is to flesh out placeholders—J. Young asks if this should be done as a subgroup or as a whole group. The timeline is to meet in January, and members will be asked to read regional workshop reports (especially from their region) and come to the table with ideas.
- Joy, Kim, Mike, Sean, Bill, Sam and Megan volunteered to help tackle the next phase.
- B. Woodward notes he is working on finishing the data policy—this could serve as appendix or a separate document.

VI. Final Items

A. Final Updates
- K. Holland notes that he sits on the Argos Joint Tariff Agreement Committee (JTA) that sets the rates that ARGOS charges to its satellite telemetry users. The French component of this consortium has become a much more dominant user than the US or other countries. The JTA was recently disbanded, so the Argos fees charged to users may no longer be based on a cost recovery protocol. The majority ownership of the ARGOS system has changed, and the majority owner is a for-profit entity. Nevertheless, ARGOS has committed to keeping charges the same through 2023, after which it may change the fee structure. By then, access will be greatly expanded with the addition of nano-satellites.
- S. Simmons notes that the SG Terms of Reference will need to be reviewed and revised for next year. It is suggested the next SG meeting take place in March or April to keep momentum. SG members should send Bill or Stephanie any major conflicts.

B. S. Simmons closed the meeting.

Meeting Attendees

Steering Group Members

Hart, K.	USGS	kristen_hart@usgs.gov
Hayes, S.	NMFS	sean.hayes@noaa.gov
Holland, K.	UH	kholland@hawaii.edu
Houtman, B.	NSF	bhoutman@nsf.gov
Levenson, J.	BOEM	Jacob.Levenson@boem.gov
Ogburn, M.	Smithsonian	OgburnM@si.edu

Price, J.	BOEM	james.price@boem.gov
Simmons, S.	MMC	SSimmons@mmc.gov
Skomal, G.	MMF	gregory.skomal@state.ma.us
Smith, D.	Army COE	David.L.Smith@usace.army.mil
Turner, W.	NASA	woody.turner@nasa.gov
Weise, M.	ONR	michael.j.weise@navy.mil
Wells, R.	Mote Marine Laboratory	rwells@mote.org
Woodward, B.	IOOS/ATN	bill.woodward@noaa.gov
Young, J.	FWRI	joy.young@myfwc.com

Others

McKinzie, M.	MBARI	mmckinzie@mbari.org
Murphy, S.	IOOC	smurphy@oceanleadership.org
Rome, N.	IOOC	nrome@oceanleadership.org

Action Items

#	Action Item	Point	Due Date
2	Set up a lessons-learned discussion with Fred from OTN regarding the lending library	B. Woodward & R. Wells	
3	Send a list of potential lending library inventory to ATN members; members should provide feedback by Christmas	R. Wells, All	December 2020
4	Connect with user-fees subgroup to determine next steps. If the user-fees approach is implemented, a one to four page document will need to be created explaining DAC capabilities and benefits.	B. Woodward, M. Weise, J. Price, B. Houtman, W. Turner	
5	Set up a new sub-group to explore options for a Network Coordinator succession plan.	B. Woodward, S. Simmons, S. Hayes, J. Price, M. Weise, K. Hart, M. McKinzie	

6	Continue fleshing out 5-Year Implementation Plan	S. Simmons, J. Young, B. Woodward, M. Weise, M. McKinzie, S. Hayes, J. Price	
7	Send out log for funders to fill out.	M. McKinzie, Funding Members	
8	Send any updates on action items from SG-7 to Bill, Sam or Stephanie.	All	

* Action lead