Lab Manual

Southeast Conservation Genetics Lab

Updated September 2021

This manual outlines general information about the lab. It is also designed to serve as an orientation document for new lab members. In this manual, you will find background information about the lab, a code of conduct, and expectations of lab members. This document will be routinely updated. For an updated version of the manual, please ask the Lab Director.

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Mission Statement: The mission of the U.S. Fish and Wildlife Service (USFWS) is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. As a USFWS genetics lab, we strive to accomplish the mission of USFWS with conservation-related research.

Goals:

- Improve conservation outcomes through the use of cutting-edge genetic data;
- Study how natural populations respond to changing environments;
- Provide conservation genetics expertise to other Service offices and partners;
- Perform research on aquatic species systematics, population genetics, and molecular ecology;
- Develop genetics management plans for at-risk, threatened, and endangered species;
- Evaluate propagation programs at national fish hatcheries;
- Train the next generation of conservationists, geneticists, systematists, and evolution biologists.

About the Lab: The Southeastern Conservation Genetics Lab is a United States Fish and Wildlife Service lab that is co-located with the School of Fisheries, Aquaculture, and Aquatic Sciences at Auburn University. The lab is physically located at Auburn University in Swingle Hall. Within the organizational structure of USFWS we are a part of the Warm Springs Fish Technology Center, which is a part of the USFWS Fisheries and Aquatic Conservation Program. We are a federal research lab, but our hybrid status as a USFWS lab and a lab at Auburn University makes us uniquely positioned to answer pressing questions in conservation science and train the next generation of conservation researchers and practitioners. Lab members include both federal employees, Auburn students and employees, and personnel with dual appointments.

Unlike many academic labs, this lab existed prior to the tenure of its current director and will likely exist past any given director's tenure. This is the main reason we have a formal lab name (i.e., Southeast Conservation Genetics Lab), rather than referring to the lab as "The Whelan Lab". Most of our current research projects started after Nathan became director. Notable exceptions include our Lake Sturgeon and Stripped Bass hatchery evaluation work.

Core hours for the lab are from 10AM-3PM Monday-Friday. Full-time lab members (USFWS employees, postdocs, graduate students) are expected to be at work during core hours but have flexibility to work before or after core hours (e.g., 7:30AM-4:00PM or 10AM-6:30PM). Exceptions apply when traveling for work, taking leave, or other circumstances that are approved by lab director. Flexible work schedules are a privilege, not a right. If abused, the ability to work flexible work hours may be revoked by lab director, resulting in assigned work time.

During the COVID-19 pandemic, the lab has utilized a maximum telework approach. As of October 2021, we are still following the maximum telework approach. **Health and Safety of the lab is the highest priority.** We follow CDC, federal workplace, and Auburn University guidelines. When lab work needs to be done, we are doing so in a safe manner. Travel during the pandemic has been limited as a result of limitations placed on us by USFWS policy, but travel is possible for mission critical work. Lab members working from home are expected to work from home as if they were coming into the office. Working from home does not mean "working from home while watching TV".

Code of Conduct

All lab members must adhere to USFWS Code of Scientific and Scholarly Conduct (See Appendix 1). Data should never be fabricated. If a lab member ever feels under so much pressure (e.g., to publish or get a grant) that they are tempted to fabricate data, they should talk with Nathan about constructive ways to handle pressure and stress. That said, research can be stressful, and stress and/or pressure is NEVER a justification for violating the Code of Scientific and Scholarly Conduct.

All lab members also must adhere USFWS Standards of Ethical Conduct (See Appendix 2).

Harassment of any nature will not be tolerated. Anyone who witnesses harassment of any nature **must immediately report** such harassment to lab director or the Warm Springs FTC Director.

Staff and Points of Contact

USFWS Staff:

Director and Regional Geneticist: Nathan Whelan, nathan_whelan@fws.gov, Office: 334-844-0562, work cell: 706-755-0192, personal cell: 636-236-7008.

Contact Nathan about: General concerns, travel requests, research updates, thesis/dissertation updates, broken equipment, injuries.

Lab Manager: Ashantye' Williams, ashantye_williams@fws.gov, Office: 334-844-9563, Work cell: 706-575-8536

Contact Ashantye' about: Lab consumables running out, broken equipment, equipment training, questions about SOPs, and lab techniques.

Fish Technology Center Director (office located in Warm Springs, GA): William Wayman, William_wayman@fws.gov, Office: 706-655-3382 ext 1229

Contact Bill about: High-level USFWS issues and USFWS supervisory problems.

Auburn Lab Members:

Graduate Student: Nick Gladstone, nscottgladstone@gmail.com

Contact Nick about: Nick's research.

Other Auburn Staff:

Graduate Program Officer: Alan Wilson, aew0009@auburn.edu

Contact GPO about graduate classes, forms, and deadlines. All GPO requests should be made through this website: https://aub.ie/SFAAS_GPO

SFAAS Administrative Support Specialist: Karen Booker, bookeks@auburn.edu.

Contact Karen about HR issues, keys, and key card access to buildings.

Facilities & Equipment

Facilities & Lab Equipment

Lab space is located in Swingle Hall 220, 222, & 224. Ashantye's office space is in Swingle Hall 224. Nathan's office is located in Swingle Hall 223. Graduate and Undergraduate office space is located in Swingle Hall 221. Lab equipment includes standard items for molecular data generation such as pipettes, thermal cyclers, gel rigs, an ultracold freezer, and "clean" hoods. Specialized equipment for various molecular data generation protocols include a Quibit and nanodrop for DNA quantification, Blue Pippen for DNA size-selection, and Fragment Analyzer for QA/QC of both raw DNA/RNA and sequencing libraries. The lab also has an Opentrons OT-2 robot for automatic lab work.

The lab has a dissecting scope with an attached light source, digital camera, and *camera lucida*. If needed for a project, other microscopy equipment is available for use by lab members (e.g., electron microscopy) through collaborations with other labs and shared equipment at Auburn University.

Computers

Two linux machines for Bioinformatics, "Currents" (32 cores & 64GB RAM) and "Shoals" (80 cores and 512 GB RAM), are available for data analyses. Lab members also can request free access to the Alabama Supercomputer resources (www.asc.edu).

The lab also has three Synology Network Attached Storage Devices. These devices are for backup of work-related data. Lab members are expected to follow the Data Storage SoP and backup their own data regularly (at least once a week).

Fieldwork

The lab has a Chevy Tahoe for fieldwork and travel to meetings. Approval to use the lab vehicle should be sought from lab director before each trip. A vehicle operation authorization form must also be filled out before any lab member is permitted to use USFWS vehicles.

Equipment for holding live animals may be available through SFAAS facilities at the North Auburn Station and/or USFWS.

General Information about equipment

If you have not used a piece of equipment before, you are expected to be trained prior to equipment use. Please contact Ashantye', or other lab members as appropriate, to schedule trainings. Contact Nathan for access to computational resources. You are also expected to use equipment in an

appropriate fashion, including cleaning up after yourself. Any injury or equipment damage, no matter how seemingly minor (e.g., breaking glassware or an uncalibrated pipette) or major (freezer breakdown or obvious hardware failure) MUST be reported immediately to the lab director and lab manager through email, a phone call, or direct contact. Please use discretion as to whether an equipment failure requires immediate attention (i.e., a phone call or direct contact) or if an email would suffice. An example of equipment failure that would require immediate notification of the lab director is a freezer breakdown. All injuries should be reported to the lab director as soon as practically possible. Prior to using the lab's vehicle, you must have signed a USFWS "Authorization for Operation of Motor Vehicles and/or Equipment" form. You also must obtain approval from the lab director before any trip taken in a lab vehicle.

Office Supplies

New lab members will likely want/need general office supplies such as notebooks, pens, pencils, etc. Please provide Nathan with a list of needed supplies and he will order them.

Data Management and backups

At the very least, lab members should be backing up their data once a week. I recommend an external hard drive or large flash drive for backup of documents that change regularly or that you may want to travel with or work on from home.

The lab also has a Synology Disk Stations that serves as both a lab-wide data repository. Please ask Nathan for an account upon joining the lab. You are encouraged to backup data onto this machine, but please keep in mind that transferring thousands of large files is time consuming and might not make sense to backup. For example, the directory where all you R packages are placed consists of thousands of files that do not need to be backed up; it would probably be faster to reinstall all packages than transfer the R folder to the Synology. DO backup you code.

See also the Data Storage SoP (Appendix 3).

Lab Member Expectations and Responsibilities

Nothing in this manual supersedes USFWS or AU policies; USFWS and AU employees are expected to understand the policies of their respective employers. Rather, this section is designed to outline general expectations of lab members and allow everyone to understand the role each lab member plays in helping us accomplish our mission and goals.

- All members of the lab and students from other labs that are working with us must sign USFWS volunteer agreements (see Appendix 4) prior to riding in our federal vehicles or working in the lab. This is a requirement that is stated in the MOU between Auburn University and USFWS.
- All members of the lab are expected to read this document and follow its instructions.
- All members are expected to work positively with others and foster a collegial work environment. Conflict is a natural part of a work environment and is not always negative.

Conflicts should be resolved in a constructive manner, which may include talking with the lab director to help with conflict mediation. When in doubt, please speak with the lab director as soon as possible so issues can be resolved.

- If you make a mistake, please tell someone, and determine how to fix or learn from the mistake. Mistakes happen, and many of the mistakes you may make have already been made by others in the lab. Knowingly covering up a mistake (e.g., contamination during a DNA extraction), rather than dealing with it in an appropriate fashion (e.g., redoing the DNA extraction), can result in unreliable results and it may possibly be a violation of USFWS Code of Scientific and Scholarly Conduct (see Appendix 1).
- All members are expected to follow core work hours (see above) and let the lab director know when traveling for work or taking leave (sick, annual, etc.).
- Label tubes, freezer boxes, etc. in an appropriate fashion so everyone in the lab knows where to find information about labelled items. At a minimum, tubes should have unique labels that can be traced to more detailed data sheets, and boxes should have date and project description.
- All members are expected to maintain lab notebooks with enough details to, at a minimum, understand what was done during an experiment, how tubes are labelled, and should allow any trained geneticist to recreate what was done. For example, if I find a tube labelled LA001 in the freezer, I should be able to find a lab notebook that states what it is (e.g., DNA extracted from *Leptoxis ampla* from the Cahaba River at HWY 82).
- Stay up to date on current research by reading papers.

The following is a list of expectations for each lab member. These lists are not exhaustive and are super-seeded by formal HR documents (e.g., USFWS EPAPs).

Director (Nathan Whelan):

- Serve as Primary Investigator for the lab.
- Actively pursue funding and write proposals.
- Perform research and write manuscripts.
- Attend conferences and present research.
- Manage budgets.
- Support lab members in their research and career goals.
- Serve as research advisor to students.
- Edit manuscripts and proposals. Provide feedback within two weeks of receiving manuscripts or proposals from lab members.
- Lead lab meetings or delegate responsibility to other lab members
- Schedule 1-on-1 30 minute meetings with individual lab members each week when not traveling.
- Collaborate with all members of the lab.
- Serve as supervisor to all other lab members.
- Serve on graduate student committees
- Follow USFWS time and attendance policies.

Lab Manager (Ashantye' Williams):

- Perform research, with an emphasis on generating data through lab work.
- Track supplies and generate acquisition requests when needed.
- Properly track and dispose of hazardous waste.
- Write reports and manuscripts.
- Service equipment.
- Train others on equipment use and lab protocols.
- Attend and contribute to lab meetings when not traveling.
- Attend weekly 1-on-1 meetings with lab director when not traveling.
- Collaborate with all members of the lab.
- Follow USFWS time and attendance policies.

Postdoctoral Researchers:

- Have USFWS volunteer agreement on file.
- Perform independent research related to projects that fund postdoctoral work.
- Write at least one manuscript per year.
- Present research at national and international conferences.
- Seek direction from lab director when needed, but postdocs are expected to be leading independent research projects with limited oversight from lab director.
- Attend and contribute to lab meetings when not traveling.
- Attend weekly 1-on-1 meetings with lab director when not traveling.
- Collaborate with lab director and others as appropriate for any given research project.
- Work at least 40 hours per week on research projects.

Graduate Students:

- Have USFWS volunteer agreement on file.
- Make reasonable progress towards completion of your degree each semester, including, but not limited to, completion of coursework and research. PhD students are expected to take primary responsibility in developing a graduate research program that results in a dissertation accepted by your graduate committee and the AU graduate school; the lab director approves and helps direct dissertation and thesis research. Masters students are typically, but not always, assigned projects; even when assigned a broad project, masters students are expected to take ownership and lead their thesis research.
- Perform approximately 20 hours per week on research related to the grant(s) funding graduate student's graduate research assistantship (if applicable). It is expected that research-related to your GRA will be related to, or a part of, your dissertation.
- Perform at least 20 hours per week of additional work on dissertation-related research and coursework.
- Participate in lab meetings and work collegially with lab-members and other graduate students.
- Routinely communicate with lab director about your near-term and long-term objectives, which involves keeping a list of ongoing and future planned projects and an updated curriculum vitae (CV).
- Satisfy all Auburn University, Graduate School, and SFAAS requirements to remain a student in good-standing until completion of your dissertation. It will be your responsibility to keep track

all graduate program deadlines, rules pertaining to the AU Graduate School, graduate committee requirements and deadlines, and thesis/dissertation submission guidelines and deadlines.
- Write manuscripts and funding proposals.
- Attend weekly 1-on-1 meetings with lab director when not traveling.

Undergraduate Students:

- Have USFWS volunteer agreement on file.
- Expectations will be largely dependent on the individual undergraduate researcher and their program (e.g., different expectations may apply to REU students vs. a student taking research credits during a semester).
- Perform research in close collaboration with director, lab manager, postdocs, and/or graduate students.
- Participate in lab meetings and work collegially with lab-members and other graduate students.
- Attend and contribute to lab meetings when not traveling.
- Attend weekly 1-on-1 meetings with lab director when not traveling.

Collaborators and Partners

This lab collaborates with many different researchers and agencies. There is an expectation that lab members will collaborate with others in a professional manner. Below is a list of current collaborators and a brief description of projects. The list is by no means exhaustive.

Ellen Strong, Department Chair and Curator of Mollusca at the National Museum of Natural History
- Pleurocerid phylogenomics
- All things that have to do with gastropod research

Paul Johnson, Director Alabama Aquatic Biodiversity Center, Alabama Department of Conservation and Natural Resources

- Any project that involves molluscs likely involves Paul in some fashion.

Jeff Garner, State Malacologist, Alabama Department of Conservation and Natural Resources

- Freshwater gastropod population genetics and phylogenomics. Helps the lab a lot in the field.

Ash Bullard, Professor, Auburn University

- Parasitology related projects

Ken Halanych, Professor, Auburn University

- Invertebrate genomics & phylogenetics

Warm Springs National Fish Hatchery, USFWS

- Hatchery Manager: Carlos Echevarria
- Lake Sturgeon hatchery program evaluation

Warm Springs Fish Health Center

- FHC Director: Brian Hickson
- Myxobollidae and other parasite work

Bear's Bluff National Fish Hatchery

- Director: James Henne
- American Shad hatchery evaluation

Jay Mays, USFWS, Ecological Services Field Office Asheville, NC

- Terrestrial snail systematics
- Mussel phylogenetics and biodiversity

Code of Scientific and Scholarly Conduct

(from: 212 FW 7.7, Scientific Integrity and Scholarly Conduct)

Service employees and volunteers must abide by the following code of scientific and scholarly conduct to the best of their ability:

- I will act in the interest of the advancement of science and scholarship for sound decisionmaking by using the most appropriate, best available, high quality scientific and scholarly data and information to support the mission of the Service.
- I will communicate the results of scientific and scholarly activities clearly, honestly, objectively, thoroughly, accurately, and in a timely manner.
- I will be responsible for the resources entrusted to me, including equipment, funds, my time, and the employees I supervise.
- I will adhere to the laws and policies related to protection of natural and cultural resources and to research animals and human subjects while conducting science and scholarship activities.
- I will not engage in activities that put others or myself in an actual or apparent conflict of interest.
- I will not intentionally hinder the scientific and scholarly activities of others or engage in scientific and scholarly misconduct.
- I will clearly differentiate among facts, personal opinions, assumptions, hypotheses, and professional judgment in reporting the results of scientific and scholarly activities and characterizing associated uncertainties in using those results for decisionmaking, and in representing those results to other scientists, decisionmakers, and the public.
- I will protect, to the fullest extent allowed by law, the confidential and proprietary information provided by individuals, communities, and entities whose interests and resources are studied or affected by scientific and scholarly activities.
- I will be responsible for the quality of the data I use or create and the integrity of the conclusions, interpretations, and applications I make. I will adhere to appropriate quality assurance and quality control standards, and not withhold information that might not support the conclusions, interpretations, and applications I make.
- I will be diligent in creating, using, preserving, documenting, and maintaining scientific and scholarly collections, records, methodologies, information, and data in accordance with Federal and Departmental policy and procedures.
- I will adhere to accepted standards (e.g., those of the National Science Foundation) for treatment of animals and plants used in science and scientific management of fish and wildlife and their habitats.

In addition, scientists and scholars must abide by the following to the best of their ability:

- I will place quality and objectivity of scientific and scholarly activities and reporting of results ahead of personal gain or allegiance to individuals or organizations.
- I will maintain scientific and scholarly integrity and will not engage in fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting scientific and scholarly activities and their products.
- I will fully disclose methodologies used, all relevant data, and the procedures for identifying and excluding faulty data.
- I will adhere to appropriate professional standards for authoring and responsibly publishing the results of scientific and scholarly activities and will respect the intellectual property rights of others.
- I will welcome constructive criticism of my scientific and scholarly activities and will be responsive to their peer review.
- I will provide constructive, objective, and professionally valid peer review of the work of others, free of any personal or professional jealousy, competition, non-scientific disagreement, or conflict of interest. I will substantiate comments that I make with the same care with which I report my own work.

In addition, decisionmakers must abide by the following to the best of their ability:

- I will do my best to support the scientific and scholarly activities of others and will not engage in dishonesty, fraud, misrepresentation, coercive manipulation, censorship, or other misconduct that alters the content, veracity, or meaning or that may affect the planning, conduct, reporting, or application of scientific and scholarly activities.
- I will offer respectful, constructive, and objective review of my employees' scientific and scholarly activities and will encourage them to obtain appropriate peer reviews of their work. I will respect the intellectual property rights of others and will substantiate comments that I make about their work with the same care with which I carry out and report the results of my own activities.
- I will adhere to appropriate standards for reporting, documenting, and applying results of scientific and scholarly activities used in decisionmaking and ensure public access to those results in accordance with Departmental and Service policy and established laws.

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Overview

1.1 What is the purpose of this chapter? This chapter:

A. Provides general policy on the ethical conduct and responsibilities of U.S. Fish and Wildlife Service (Service) employees, and

B. Describes the duties and responsibilities of ethics officials.

1.2 What is the scope of this chapter? This chapter applies to all employees.

1.3 What are the authorities for this chapter?

A. Ethics in Government Act (5 U.S.C. 101 et seq.).

B. Executive Order 12674 (E.O. 12674), Principles of Ethical Conduct for Government Officers and Employees.

C. Standards of Ethical Conduct for Employees of the Executive Branch (5 CFR 2635).

D. Office of Government Ethics and Executive Agency Ethics Program Responsibilities (5 CFR 2638).

E. Supplemental Standards of Ethical Conduct for Employees of the Department of the Interior (5 CFR 3501).

F. Department of the Interior Employee Responsibilities and Conduct (43 CFR 20).

G. Secretarial Order No. 3288, Enhancing and Promoting an Ethical Culture within the Department of the Interior, August 2009.

1.4 What is the Service policy on the ethical conduct and responsibilities of employees?

A. It is our policy and expectation that all employees will maintain high standards of honesty, impartiality, character, and conduct to ensure the proper performance of Government business and the continual trust and confidence of the citizens of the United States.

B. The conduct of employees must reflect the qualities of:

(1) Courtesy, integrity, and loyalty to the United States;

(2) A deep sense of responsibility for the public trust;

(3) Promptness in working with and serving the public; and

(4) A standard of personal behavior that reflects positively on and will be a credit to both employees and the Service.

C. These principles apply to official conduct and to private conduct that affects, in any way, the ability of employees or the Service to accomplish its mission and the work of the Department of the Interior (Department).

Responsibilities

1.5 How is the ethics program organized, and what are the officials' responsibilities?

A. Departmental Ethics Office: The Director of the Departmental Ethics Office is the Department's Designated Agency Ethics Official (DAEO), who is responsible for the management and oversight of the Department's ethics program. The Departmental Ethics Office is a division of the Solicitor's Office.

B. Service's ethics program: The ethics officials responsible for implementing the Service's ethics program include:

(1) The Service Director, who is required by Secretarial Order 3288 to serve as our most senior Ethics Counselor;

(2) Two full-time national Ethics Counselors (the Deputy Ethics Counselor and the Associate Ethics Counselor). The Deputy Ethics Counselor position also was established by Secretarial Order; and

(3) Collateral duty Assistant Ethics Counselors at Headquarters and in each Regional office.

C. Specific responsibilities: See Table 1-1.

Table 1-1: Responsibilities of the Service's ethics officials	
These employees…	**Are responsible for…**
(1) The Director (the Service Ethics Counselor)	**(a)** The effectiveness of the Service's overall ethics program; **(b)** Administering the statutes, regulations, policies, and procedures governing the ethical conduct and responsibilities of Service employees; **(c)** Employing a full-time Deputy Ethics Counselor and providing adequate staff and the financial and technical resources to implement the ethics program; **(d)** Ensuring that employees have access to ethics officials, resources, guidelines, and training; **(e)** Requiring supervisors and managers to work with their Ethics Counselors to put appropriate controls in place, including recusals, to avoid conflicts of interest; **(f)** Ensuring the Service has a procedure for soliciting employee concerns and feedback on personal or programmatic ethics matters; **(g)** Cooperating fully with all requests from the DAEO and the Deputy Ethics Counselor; **(h)** Reviewing and approving employee requests to serve, in their official capacity, as an officer or board member for a non-Federal organization (see 212 FW 4); and **(i)** Ordering remedial action when employees violate ethics statutes or regulations.
(2) The Deputy Ethics Counselor	**(a)** Developing, implementing, and disseminating policy and procedures on employee standards of ethical conduct; **(b)** Administering the financial disclosure program; **(c)** Developing, managing, and implementing an ethics training program; **(d)** Counseling and advising Service employees on ethics matters; **(e)** Advising the Regional and Headquarters offices on ethics policy matters and sensitive, difficult, and controversial issues; **(f)** Coordinating with the Inspector General's Office on the investigation of ethics violations; and **(g)** Serving as a liaison with the Departmental Ethics Office.

Table 1-1: Responsibilities of the Service's ethics officials	
These employees…	**Are responsible for…**
(3) The Associate Ethics Counselor	Assisting the Deputy Ethics Counselor with accomplishing the responsibilities listed above.
(4) The Regional and Headquarters Assistant Ethics Counselors	**(a)** Responding to employee ethics questions; **(b)** Resolving conflict of interest situations unless or until the Service Ethics Counselor or Deputy Service Ethics Counselor takes remedial action; **(c)** Ensuring that new employees receive a minimum of 1 hour of official duty time, within 90 days from beginning employment, to review key ethics laws, regulations, and guidance (see 5 CFR 2638.703), including the Executive Order, regulations, and Departmental policies described in section 1.3; **(d)** Conducting the annual Confidential Financial Disclosure Report (OGE-450) filing cycle, which includes collecting, reviewing, and certifying reports from employees whose positions require them to file. (see 212 FW 2); **(e)** Providing resources for completing the annual ethics training requirement to employees who are required to file Confidential Financial Disclosure Reports (see 212 FW 2); **(f)** Providing permission, advice, or guidance regarding potential ethics issues as required by Service manual chapters; and **(g)** Ordering remedial action when employees violate the statutes or regulations regarding the standards of ethical conduct.

1.6 What are the responsibilities of supervisors and employees? See Table 1-2.

Table 1-2: Responsibilities of supervisors and employees	
These employees…	**Are responsible for…**
A. Supervisors	**(1)** Providing new employees with a minimum of 1 hour of official duty time, within 90 days from beginning employment, to review key ethics laws, regulations, and guidance (see 5 CFR 2638.703), including the Executive Order, regulations, and Departmental policies described in section 1.3; **(2)** Providing permission, advice, or guidance regarding potential ethics issues as required by Service manual chapters; **(3)** Providing employees with contact information for Ethics Counselors who can advise them on ethics matters; **(4)** Requesting assistance, when needed, from appropriate Ethics

Table 1-2: Responsibilities of supervisors and employees	
These employees…	**Are responsible for…**
	Counselors to help employees with ethics and conduct issues; **(5)** Reporting any potential conflict of interest situations to the appropriate Service Ethics Counselor for resolution; **(6)** Identifying those employees whose responsibilities require them to file an annual Confidential Financial Disclosure Report, and ensuring that they file the reports (see 212 FW 2); and **(7)** Ensuring that employees who are required to file Confidential Financial Disclosure Reports receive at least 1 hour of annual ethics training (see 212 FW 2);
B. Employees	**(1)** Complying with the Department's *Ethics Guide,* including learning and understanding the ethics laws, regulations, guidelines, and the fourteen general principles of ethical conduct in E.O. 12674; **(2)** Maintaining high standards of honesty, integrity, impartiality, and conduct to ensure the proper performance of Government business and the continual trust and confidence of the citizens of the United States; **(3)** Refraining from engaging in any conduct, while on or off duty, that may adversely impact the reputation of the Service; **(4)** Seeking guidance from their servicing Assistant Ethics Counselor, the Service Deputy Ethics Counselor, Service Associate Ethics Counselor, or the Department's Ethics Office when ethics questions arise; **(5)** Requesting permission, advice, or guidance regarding potential ethics issues as required by Service manual chapters; and **(6)** Reporting both personal and programmatic ethics concerns in a timely manner to their supervisor, Assistant Ethics Counselor, Service Deputy Ethics Counselor, Service Associate Ethics Counselor, the Departmental Ethics Office, or the Office of Inspector General (as necessary).

Principles of Ethical Conduct

1.7 What are the principles of ethical conduct?

A. It is important for every citizen to have complete confidence in the integrity of the Federal Government.

B. To ensure that confidence, all Federal employees must respect and adhere to the "Fourteen Principles of Ethical Conduct" below (see E.O. 12674):

(1) Public service is a public trust, requiring you to place loyalty to the Constitution, the laws, and ethical principles above private gain.

(2) You must not hold financial interests that conflict with the conscientious performance of duty.

(3) You must not engage in financial transactions using nonpublic Government information or allow the improper use of such information to further any private interest.

(4) You must not, except when there are reasonable exceptions allowed by regulation, solicit or accept any gift or other item of monetary value from any person or entity seeking official action from, doing business with, or conducting activities regulated by the Service, or whose interests may be substantially affected by the performance or nonperformance of your duties.

(5) You must put forth an honest effort when performing your duties.

(6) You must not make unauthorized commitments or promises of any kind claiming to bind the Government.

(7) You must not use public office for private gain.

(8) You must act impartially and not give preferential treatment to any private organization or individual.

(9) You must protect and conserve Federal property and not use it for other than authorized activities.

(10) You must not engage in outside employment or activities, including seeking or negotiating for employment, that conflict with official Government duties and responsibilities.

(11) You must disclose waste, fraud, abuse, and corruption to appropriate authorities.

(12) You must satisfy in good faith your obligations as a citizen, including just financial obligations, especially those such as Federal, State, or local taxes that are imposed by law.

(13) You must adhere to all laws and regulations that provide equal opportunity for all Americans, regardless of race, color, religion, gender, national origin, age, handicap, sexual orientation, or disability.

(14) You must try to avoid any actions creating the appearance that you are violating the law, the Standards of Ethical Conduct for Employees of the Executive Branch (5 CFR 2635), E.O. 12674, Supplemental Standards of Ethical Conduct for Employees of the Department of the Interior (5 CFR 3501, 43 CFR 20), and Service policy.

Penalties for Violations

1.8 What are the penalties for violations? You may be subject to disciplinary or adverse action, including removal from Federal service, if you fail to comply with the conflict of interest laws, regulations, orders, or policies, or if you do not follow the proper requests of supervisors responsible for employee performance. In addition, some ethics laws are criminal statutes and may involve criminal sanctions.

/sgd/ James W. Kurth
DEPUTY DIRECTOR

Date: February 24, 2016

Genetics CoP Data Storage and Backup SOP

All labs should have long term data storage devices. Most likely this will be one or more network attached storage devices (NAS), which could be coupled with one or more Servers for shorter term storage. A second NAS is ideal as it can serve as a true data backup and can be located at a separate location from primary NAS. This can prevent data loss in the event of a catastrophic disaster (e.g., fire or tornado).

Data are broadly defined here to include any type of genetic data. This could be Sanger sequence .ab1 files, microsatellite data, or "next-generation" sequencing data (i.e., fastq, bam, or tab delimited format).

Directory structure on your lab's storage device(s) is up to each individual lab to provide flexibility. However, all raw data should be stored in a master folder separate from any other backup files (e.g., workstation backups). Who has write permissions for data folders should be determined by the lab, but safeguards should be put in place (e.g., limited number of people with write permission or copies of data on different NAS units) to ensure data are not inadvertently deleted. All employees should have read access to the raw data folder and subdirectories. Storage location of intermediate data files while project is ongoing does not necessarily require read access for all employees.

Procedure for raw data from 3rd party sequencers

1) If data arrive on a hard drive or flash drive, labs are encouraged to retain the hard drive or flash drive with the data as a secondary, or tertiary, backup.
2) As soon as practical, but no longer than a week after data are made available, transfer data into the data repository section of lab's primary long-term storage device. This should be done as soon as practical after first data upload, no later than a week after first data upload.
    a. Ponds will be the primary backup NAS with 64TB of storage. It is the rack unit located with Currents and Shoals. Only lab director has write access to data repository. IP address: 131.204.37.145. Contact lab director for an account (read access to data repository).
3) If your lab has a secondary backup system (e.g., two units in two separate locations to ensure redundancy in case of catastrophic disaster at a building), transfer data from primary data repository to secondary backup system as soon as possible, but no longer than a week after initial backup.
    a. Lakes will be the secondary backup NAS with 64TB of storage. Location TBD. Only lab director has write access to data repository. IP address: (use CurrentsStation until online).
4) After data transfer, file integrity should be checked with md5sum. Original md5sum information should be provided by sequencer; if not, ask sequencing facility for them.

- Miscellaneous considerations:
    - Data compression: You will likely want to compress your data. Zipped tarball (tar.gz) is a common method for compression, but xz compression can be useful for genetic data. If you compress data prior to data transfer, you should do an md5sum check prior to transfer so you can confirm data integrity after transfer. Compressing data already

placed on NAS is possible, but performing data compression on files placed on the NAS could be much more time consuming that on a workstation. Individual labs should determine the approach that best fits their needs.

- Demultiplexed Illumina data: In cases where raw sequence data include multiplexed samples, barcode information for each sample MUST be included in the folder with multiplexed raw data. Once data are demultiplexed into individual samples, the above backup procedure should be followed if demultiplexed data are to be stored long-term. Depending on the project and data type, it may make sense to only store the multiplexed raw data long term. In these cases, the demultiplexed data do not have to be backed up following the above procedures. In some cases, it may make sense to retain only demultiplexed data. If this is done, demultiplexed data MUST include barcode information in fastq headers, undetermined reads should be retained, and a README file with demultiplex information like the program used for demultiplexing should be included in backup folder. Each individual lab should make a decision about whether multiplexed and/or demultiplexed data should be retained long term.

Procedure for raw data from your lab's machines (e.g., sequencers, Fragment Analyzer, BioAnalyzer, qPCR thermal cyclers).

1) Within a week of data being generated, transfer data from sequencer or other machine into data repository section of your lab's long-term storage device.
    a. Ponds will be the primary backup NAS with 64TB of storage. It is the rack unit located with Currents and Shoals. Only lab director has write access to data repository. IP address: 131.204.37.145. Contact lab director for an account (read access to data repository).
2) If your lab has a secondary backup system (e.g., two units in two separate locations to ensure redundancy in case of catastrophic disaster at a building), transfer data from primary data repository. This should be done as soon as practical after first data upload, no later than a week after first data upload.
    a. Lakes will be the secondary backup NAS with 64TB of storage. Location TBD. Only lab director has write access to data repository. IP address: (use CurrentsStation until online).
3) For larger files that require tens or hundreds of minutes to transfer, data integrity should be checked with md5sum. Original md5sum information should be provided by sequencer; if not, ask sequencing facility for them.

- Miscellaneous considerations:
    - Data compression: You will likely want to compress your data. Zipped tarball (tar.gz) is a common method for compression, but xz compression can be useful for sequence data. If you compress data prior to data transfer, you should do an md5sum check prior to transfer so you can confirm data integrity after transfer. Compressing data already placed on NAS is possible, but performing data compression on files placed on the NAS could be much more time consuming that on a workstation. Individual labs should determine the approach that best fits their needs.

- Demultiplexed Illumina data: In cases where raw sequence data include multiplexed samples, barcode information for each sample MUST be included in folder with multiplexed raw data. Once data are demultiplexed into individual samples, the above backup procedure should be followed if demultiplexed data is to be stored long term. Depending on the project and data type, it may make sense to only store the multiplexed raw data long term. In these cases, the demultiplexed data do not have to be backed up following the above procedures. In some cases, it may make sense to retain only demultiplexed data. If this is done, demultiplexed data MUST include barcode information in fastq headers, undetermined reads should be retained, and a README file with demultiplex information like the program used for demultiplexing should be included in backup folder. Each individual lab should make a decision about whether multiplexed and/or demultiplexed data should be retained long term.

Procedure for data storage and backup of files that are not raw data

- As staff work on genetic data, intermediate files are almost always generated. These can be processed fasta files that were derived from raw fastq sequencing data, vcf files, genepop files, or one of many other data formats and types. These files need to be backed up at regular timeframes. However, we should expect that these intermediate files could be regenerated from raw data. Therefore, storage needs are different and redundancy is less important. Scripts or other documents should also specify program versions used for analyses to allow for regeneration of intermediate data files in case of a catastrophic event. After project completion, some or all intermediate data files could be removed from FWS storage devices, especially if input data files have been uploaded to public repositories (e.g., FigShare or DataDryad).

1) As lab members work on projects, all files used as program input should be backed up to a storage device at least once per week. The one exception to backing up input files in this manner is demultiplexed raw fastq files (see above). Program output files relevant to analytical interpretation should be backed up to a storage device at least once per week. Intermediate files not relevant to data interpretations like those generated and used internally by any given program do not require backup, but they can be backed up with input and output files if deemed necessary for any given project.
    a) currentsStation is the legacy Synology System. 20TB of total storage. This is the main personal workstation backup system. IP address: 131.204.37.123. Behind Auburn University firewall. Each user will have a folder where they can backup their workstation and intermediate files. Contact lab director for an account.
    b) Larger, and less often accessed intermediate files should be backed up to Ponds. Each user will have their own folders for storage of intermediate files with read and write access. DataRepository (see above) will only be writable by Lab Director but readable by all users. IP address: 131.204.37.145. Contact lab director for an account (read access to data repository).
2) Source code binaries used to process data should be backed up when possible as program versions change and obtaining old versions that are required for a preferred analysis can be difficult.

3) Upon project completion, making input and output files publicly available may be appropriate (e.g., upon peer-reviewed publication) to ensure data reproducibility. If so, see below.
4) Upon project completion, if input and output data files are not made publicly available, they should be archived. All files should be placed in a single folder for any given project and compression of the folder likely makes sense. This archival folder/file should be copied to secondary backup because the data are designed for long-term storage.

Procedure for uploading data to public repositories.

- Southeast Conservation Genetics Lab policy is to make all raw sequence data available upon publication.

1) When being made publicly available, raw sequence data should be uploaded to the relevant National Center for Biotechnology Information (NCBI) database(s) (e.g., GenBank, SRA, etc.)
2) Code used for analyses should be uploaded to github or other code repository.
3) Input and output data files that are not raw sequence data (e.g., vcf files, genepop files, etc.) should be uploaded to repositories such as DataDryad or FigShare depending on journal requirements. DataDryad often has a fee associated with creating a data repository, unless the fee is covered by a journal. FigShare is free as long as files are less than 5GB. Raw sequence data *should not* be uploaded to repositories like FigShare and DataDryad.
4) Because input and output data files are uploaded to public repositories, these files do not *need* to be archived long-term on Service owned devices.
5) Raw data, especially sequencing data, should be retained on a Service owned device.

VOLUNTEER SERVICE AGREEMENT—NATURAL & CULTURAL RESOURCES

1. ☑ INDIVIDUAL	2. ☐ GROUP
3. NAME OF AGENCY USFWS-WS Fish Tech Center, SECGL	4. AGREEMENT #
5. NAME OF VOLUNTEER (First, Last)	6. U.S. CITIZEN OR PERMANENT RESIDENT ☐ Yes ☐ No, list visa type_____
7. NAME OF GROUP	8. NAME OF GROUP CONTACT (First, Last)
9. STREET ADDRESS	10. CITY, STATE, ZIP CODE

11. EMAIL ADDRESS	12. PHONE Home: Mobile:	13. AGE ☐ Under 15 ☐ 15 - 18 ☐ 19 - 25 ☐ 26 - 35 ☐ 36 - 54 ☐ 55 and Older

14. **ETHNICITY & RACE (Optional):** Please report both ethnicity and race and tell us if you are a veteran or have a disability. Multiracial respondents may select two or more races. This information will inform our understanding of diversity and inclusion among the volunteer force in the natural and cultural resource areas.

14a. **Ethnicity** (Select one): ☐ Hispanic or Latino ☐ Not Hispanic or Latino	14b. **Race** (Select one or more, regardless of ethnicity): ☐ American Indian or Alaskan Native ☐ Asian ☐ Black or African American ☐ White ☐ Native Hawaiian or Other Pacific Islander	14c. Are you a Veteran? ☐ Yes ☐ No 14d. Do you have disability? ☐ Yes ☐ No

EMERGENCY CONTACT INFORMATION

15. NAME (Last, First)	16. PHONE Home: Mobile:	17. EMAIL ADDRESS
18. STREET ADDRESS	19. CITY, STATE, ZIP CODE	

GOVERNMENT OFFICIAL COMPLETES THIS SECTION

20. AGENCY CONTACT NAME (Last, First) Whelan, Nathan	21. AGENCY CONTACT EMAIL & PHONE nathan_whelan@fws.gov (706) 755-0192
22. REIMBURSEMENTS APPROVED: ☐ Yes ☐ No Type and Rate of Reimbursement:	23. VOLUNTEER POSITION/GROUP PROJECT TITLE:

24. **Description of service to be performed.** Provide a brief abstract of volunteer or service activity and the location of the volunteer activity, and attach description of service to be performed. Service description should include details such as time and schedule commitment, use of government vehicle, use of personal equipment and/or vehicle, skills required (note certifications if necessary), level of physical activity required, etc. If this is a group agreement, the leader is to provide the group name and attach a complete list of group participants or optional form 301b for each volunteer.

VOLUNTEER/SERVICE ACTIVITY ABSTRACT

25. **Check all that apply:** ☐ Description of service attached ☐ List of group participants/optional form 301b attached ☐ Job Hazard Analysis ☐ Valid Driver's License Verified (if required)

PARENTAL CONSENT FOR VOLUNTEER UNDER AGE 18

26. PARENT OR LEGAL GUARDIAN (First, Last)	27. PHONE Home: Mobile:	28. EMAIL ADDRESS
29. STREET ADDRESS	30. CITY, STATE, ZIP CODE	

31. I affirm that I am the parent/guardian of the above named volunteer. I understand that the agency volunteer program does not provide compensation, except as otherwise provided by law; and that the service will not confer on the volunteer the status of a Federal employee. I have read the attached description of the service that the volunteer will perform. I give my permission for _____ to participate in the specified volunteer activity.
(NAME OF YOUTH)

32. Parent/Guardian Signature | Date

VOLUNTEER & GROUP LEADER AFFIRMATION

33. I understand that I will not receive any compensation for the above service and that volunteers are NOT considered Federal employees for any purpose other than tort claims and injury compensation. I understand that volunteer service is not creditable for leave accrual or any other employee benefits. I also understand that either the government or I may cancel this agreement at any time by notifying the other party. I understand that my volunteer position may require a reference check, background investigation, and/or a criminal history inquiry in order for me to perform my duties. I understand that all publications, films, slides, videos, artistic or similar endeavors, resulting from my volunteer services as specifically stated in the attached job description, will become the property of the United States, and as such, will be in the public domain and not subject to copyright laws. I understand the health and physical condition requirements for doing the work as described in the job description and at the project location, and certify that the statements I have checked below are true:

☐ I or group leader know of no medical condition or physical limitation that may adversely affect my or members of the group ability to provide this service. If a group see attached OF301b.

☐ I or a member of the group have a medical condition or physical limitation that may adversely affect my ability to provide this service and have informed the Government Representative. If a member of a group see attached OF301b.

☐ I or group member do not consent to being photographed or to the release of my photographic image. If a member of a group see attached OF301b.

I do hereby volunteer my services as described above, to assist in authorized activities at _____ and I agree to follow all applicable safety guidelines. See attached OF301b attached if a member of a group. **(NAME OF FEDERAL AGENCY)**

34. Signature of Volunteer or Group Leader | Date

The above-named agency agrees, while this arrangement is in effect, to provide such materials, equipment, and facilities that are available and needed to perform the service described above, and to consider you as a Federal employee only for the purposes of tort claims, liability and injury compensation to the extent not covered by your volunteer group, if any.

35. Signature of Government Representative | Date

TERMINATION OF AGREEMENT

36. Agreement Terminated Date: | Total Hours Completed:

37. Signature of Government Representative:

PUBLIC BURDEN STATEMENT

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0080. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. USDA, DOI, DOC and DOD prohibit discrimination in all programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. Not all prohibited bases apply to all programs.

PRIVACY ACT STATEMENT

Collection and use is covered by Privacy Act System of Records OPM/GOVT-1 and USDA/OP-1, and is consistent with the provisions of 5 USC 552a (Privacy Act of 1974), which authorizes acceptance of the information requested on this form. The data will be used to maintain official records of volunteers of the USDA and USDI for the purposes of tort claims and injury compensation. Furnishing this data is voluntary, however if this form is incomplete, enrollment in the program cannot proceed.