

## Chapter 7

# Fisheries Employment in Cooperative Research Units: Where Agency Meets Academia<sup>1</sup>

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Many graduates in fisheries science and related fields flourished in the learning environment of their university and would like to continue enjoying that atmosphere, while others seek the close interaction with aquatic resources and fishery constituents that is experienced in natural resource agency employment. If you are hesitant to give up the flexibility and stimulation of campus life, but would like to make a direct and positive impact on fisheries and aquatic resource management, a position in a Cooperative Research Unit may be your place in the profession. Cooperative Research Unit employees work on university campuses and are part of the academic community, but conduct research to address the needs of natural resource management agencies. Interactions between Unit employees and agency biologists are an important function of each unit. The primary employment opportunities at Cooperative Research Units are Unit scientist positions (Unit Leader or Assistant Unit Leader), which are permanent federal positions with the U.S. Geological Survey (USGS) in the Department of the Interior. These positions require a doctoral degree. Other Unit positions may be available at Doctoral, Master's or Bachelor's levels of education; these are usually administered by the host university, are grant-funded, and are of varying duration.

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<sup>1</sup> The views expressed in this chapter are those of the authors and are not presented as the official position of the U.S. Geological Survey or other cooperating agencies or institutions.

## What are Cooperative Research Units?

Cooperative Research Units are each a joint venture among the federal government (USGS), a state natural resource agency, and a state host university (usually the land-grant university). The Wildlife Management Institute, U.S. Fish and Wildlife Service, and other state and federal agencies may also serve as cooperators at various units. The three-point mission of Cooperative Research Units is *Research* on renewable natural resources to address the information needs of cooperating agencies and partners, *Education*, primarily in the form of graduate student mentorship and teaching, and *Technical Assistance* and training to cooperating agencies and others toward improved natural resource management. Cooperative Research Units provide the mutually beneficial connection between natural resource agencies and universities. Federal and state agencies are afforded access to Unit scientists, other university faculty, and campus facilities, while the host university benefits by additional expertise on campus and access to relevant agency research and training opportunities.

The first unit was established in 1935 at Iowa State College by visionary J. Norwood “Ding” Darling. His pioneering efforts were in response to the human changes in land-use practices and associated declines in renewable natural resources of the time. Another goal was to provide trained individuals in government to guide management of these resources. Darling’s concept of a nationwide network of Cooperative Wildlife Research Units was realized that same decade as a federal program of nine Wildlife Units. The program gradually expanded among states over time, and in 1960 Congress gave statutory recognition to the program by enactment of the Cooperative Research Units Act, providing a line item for the program in the federal annual budget. While the congressional act improved the program’s stature and stability, perhaps the most important provision of the act was to expand the program to include fisheries at Cooperative Units, and the development of several Cooperative Fishery Units followed. The Cooperative Research Units Program has a rich and interesting history that is eloquently described and detailed by W. Reid Goforth in a document that celebrated the 70th anniversary of the program (Goforth 2006).

Today, there are 40 Cooperative Research Units in 38 states (Figure 7.1). Most are combined Fish and Wildlife Research Units (33 units), but several separate Fishery Units (5) and Wildlife Units (2) also exist. The program is staffed by more than 110 Ph.D. scientists who may advise as many as 600 graduate student researchers. Each Unit is staffed according to the unique needs of its host state and university. Additional states have expressed interest in establishing new Cooperative Research Units, and the program is expected to grow.

Research topics of Unit scientists can range from those of local or state interests, to those of regional, national, or international scope. Research is directed toward the needs of the resource management agencies, usually as appropriate for involvement by graduate students for incorporation into theses. Funding is often provided by the state or federal agency requesting the work but sources can include nongovernmental agencies, corporations, and private foundations. Unit students may also be funded by traditional academic sources (e.g., fellowships, teaching assistantships), but most are supported by research assistantships associated with research and grant funding initiated by a Unit scientist. Research conducted by Unit scientists must be approved by a coordinating committee composed of the Unit cooperators.

## Unit Employment

The typical Fish and Wildlife Unit is staffed by three federal scientists: a Unit Leader and two Assistant Unit Leaders. Two scientists (one Leader and one Assistant Leader) are staffed at Fishery Units and Wildlife Units, and a few states support Units with four or five scientists. The Unit Leader may be trained either in a fisheries or wildlife discipline, whichever is deemed appropriate by the cooperators to meet the needs of the Unit. The Unit Leader is a senior scientist who has usually served as an Assistant Unit Leader somewhere in the Unit program. In addition to his or her scientific duties toward accomplishment of the Unit's mission, the Leader is administratively responsible for the activities of the Unit. If there are two Assistant Unit Leaders, one is usually trained in fisheries and one in wildlife, and their primary duties are directed to accomplishment of the Unit's mission. Assistant



by a series of funded grants. Further, opportunities are available for postdoctoral or post-Master's researchers to develop proposals and seek funding to support their position in collaboration with their Unit scientist supervisor. Many Units also employ full-time or hourly technical assistants (usually undergraduate students or recent B.S. graduates) to organize and repair research equipment, maintain vehicles, and assist in the field or lab, and Units often host students or recent graduates in internships. All of these temporary Unit positions can serve as professional "stepping stones" to improve one's qualifications for subsequent opportunities for graduate school or permanent employment.

By and large, the most prevalent temporary positions at Coop Units are graduate research assistants who are working toward an advanced degree. Overall, the graduate student experience for those students advised by Unit scientists is not much different than that for other university graduate students in the same department or school (see Chapter 3). Three primary but subtle differences exist, however. First, as supervisees of a Unit scientist, Unit graduate students technically serve as volunteers of the federal government and as such are required to complete specific safety training for some field procedures (e.g., boat operation, electrofishing, low-altitude flying). In addition to facilitating student education and improving safety, such training and certification enhances the student's qualifications for future employment. Secondly, Units tend to accumulate research equipment and vehicles through cooperator support that are an asset to students initiating thesis research. The availability of federal vehicles and boats is typical for Unit students, but the inventory of other research equipment relies on grant funding awarded to Unit scientists that serve as student advisors. Thirdly, the Unit graduate student experience nearly always involves close interaction with agency biologists, which can be enlightening and useful for future professional development. This interaction is usually accomplished by virtue of research funding provided by an agency, but also occurs through the expectation of both Unit scientists and cooperating agency biologists to partner in achieving all three Unit mission components (research, education, and technical assistance). Agency biologists may return to graduate school for additional training at a Unit with the support of their agency, which can improve the atmosphere, diversity, and educational experience at that Unit and university. Of course, many other university departments and faculty ad-

visors may function in similar ways as Units and their scientists to provide training, equipment, and agency interaction, but these are common features that you should expect to encounter at Coop Units.

## The Ups and Downs of Unit Positions

Some say that Unit scientists are federal employees stationed on a university campus, whereas others refer to them as university faculty members that are salaried by the federal government, but the fact of the matter is that both perceptions are true and neither alone is a complete description of a Unit scientist position. Unit scientists are employees of USGS housed on university campuses *and* they serve as faculty members and graduate student advisors in a home department or school. Thus, Unit scientists enjoy the best and endure the worst aspects of both agency and academic employment.

Unit scientists are both federal employees and faculty, so they have all the resources and facilities of the federal government and their host university available to pursue their work. On the other hand, they must produce results that support three institutional missions (federal, state, and university), follow multiple sets of rules and guidelines, and answer to three bosses. An important advantage of Unit positions is that the scientist can wear either the agency hat, the academic hat, or both, depending on the situation. They also enjoy most all faculty privileges and university resources (e.g., administrative and grant support, laboratory facilities, university motor pool, library services, athletic facilities, access to teaching assistantships and other university support), as well as access to the vast assets and support of the federal government (e.g., streamlined processing of federal grants, access to government travel resources, surplus equipment, and vehicles). Unit scientists may have access to funding opportunities reserved for agency scientists, but may not be eligible for certain university funding sources, such as new faculty grants. One privilege that separates Unit scientists from other federal scientists who may be located on campus is that Unit scientists may serve as principal investigators on university grants.

Wearing two hats, however, may require double the amount of paperwork and other minutiae that most scientists seek to avoid. Unit scientists are required to complete numerous federal training modules in areas such as ethics and diversity, computer security, and workplace whistle-blowing, in addition to courses in field safety procedures. Published works of Unit scientists must undergo agency review for potential policy implications, in addition to the usual peer review for scientific content. Unit scientists must also follow university regulations and training for animal use and care, laboratory safety plans, and other university administrative or safety requirements. Assistant Unit Leaders undergo annual federal evaluation by the Unit Leader and Unit Leaders are evaluated by their regional Unit Supervisor. All Unit scientists participate in four-year panel reviews of their research productivity and all participate in departmental evaluation by their university. Other grant-funded Unit researchers (postdoctoral, post-Master's, and other staff) are university employees and avoid the federal administrative burden, but must meet all federal training requirements, and are evaluated by their university supervisor, usually a Unit scientist.

How do Unit scientist positions compare to tenure-track university faculty positions? No two Cooperative Research Units are alike, and the same may be said of universities and their departments, but several fundamental differences exist between typical Unit scientist positions and tenure-track faculty positions (Table 7.1). In general, relative to faculty positions, Unit scientist positions emphasize research over teaching, extension, or outreach. Salaries and benefits are usually comparable, but Unit scientists may not financially participate in professional consulting. Relationships with agencies facilitate grant funding, job security is comparable, evaluation procedures are functionally similar, academic freedom is more limited, agency interaction is greater, and prestige and respect are generally similar. The Unit Leader position includes a substantial administrative component, and if the individual is not released of other duties or recognized for that additional responsibility, then this can serve as a disadvantage over the Assistant Unit Leader position. Unit Leaders usually enjoy added prestige, shape cooperator relations, and influence the atmosphere and focal directions of the Unit, which may be rewarding, but there is no salary supplement associated with the position.

**Table 7.1.** Comparison of job attributes typically associated with Cooperative Research Unit scientist and university tenure-track faculty positions.

Job Attribute	Cooperative Research	
	Unit Scientist	Tenure-Track Faculty Position
Primary responsibilities	Research emphasis, teaching and extension reduced; graduate education emphasis; administrative component for Unit Leaders	Variable among positions, substantial research and teaching or extension emphases at undergraduate and graduate levels typical
Salary	Federal GS scale, includes supplement for some areas with inflated costs of living; 12-month employment; annual raise most years, increases with GS-scale promotion; consulting for additional pay prohibited	Variable among universities and positions; appointment may provide 9 or 12 months salary, with potential for grant supplement; annual raises fluctuate with state budgets, increases with tenure and academic rank; consulting for additional pay usually allowed or encouraged
Funding	Advantage with cooperating agencies, availability of state and federal operating funds, start-up funding minimal, restricted from certain competitive programs	Advantage with university fellowships or funding programs, start-up funding usually substantial, no restrictions on competition
Job security	Generally secure after 1 year probation, but subject to cooperator approval and federal budget	Low security until tenure review, then high if granted
Evaluation and promotion	Reviewed by supervisor annually, reviewed by one or more federal panels for promotion, focused on research accomplishments	Reviewed by faculty colleagues and university administrators, according to research, teaching, or extension components of appointment

The history, notoriety, and camaraderie of the Cooperative Research Units Program are of great benefit to Unit employees. Being part of a larger program serves Unit scientists in many ways. Morale is boosted by the interaction with scientists at other Units; this

**Table 7.1.** Continued.

Job Attribute	Cooperative Research	
	Unit Scientist	Tenure-Track Faculty Position
Prestige and respect	University appointment (adjunct or regular faculty) and respect variable among Units and institutions	Generally high, but may vary with department or appointment
Agency interaction	Substantial and expected	Variable at individual discretion
Academic freedom	Activities must be approved by cooperators, policy implications reviewed by administrators; federal regulations and university conduct standards must be followed	Freedom to pursue most topics within university standards of conduct

occurs spontaneously or through planned workshops or occasional meetings of federal personnel from all Units. The administrators and staff of the Cooperative Research Unit Headquarters in Reston, Virginia, provide constant and strong support for Unit scientists, staff, and students, and opportunities for scientific collaboration are great. Examples of such collaboration include nationwide initiatives, such as the GAP Analysis Program to develop Geographic Information System layers for habitat and biodiversity for each state (Scott et al. 1993), and a regional collaboration among Unit scientists from states bordering the Missouri River to study the population structure and habitat use of benthic fishes of that system on a broad spatial scale (see <http://infolink.cr.usgs.gov/Science/BenthicFish>).

## How to Land a Unit Job

Openings for Assistant Unit Leader positions are usually advertised in much the same way as university faculty positions. The application process, however, is different from that for a faculty position because Unit staff are federal civil service employees. The

applicant must submit an application to the appropriate regional government personnel office (as indicated in the job announcement) and should be sure to completely address the ranking factors of Knowledge, Skills, Abilities, and Other Characteristics listed on the job announcement (KSAs; see also Chapters 4 and 5). The personnel office certifies the eligibility of the applicants and forwards two lists of eligible candidates for further consideration by the cooperators. One list includes only those applicants who are current federal employees, and the other lists all other eligible candidates. Certain military veterans receive special consideration in the process. From these lists, the cooperators will select their Assistant Unit Leader, using an interview process similar to that for a university faculty member (see Chapter 6). The individual is chosen by consensus of all the Unit cooperators, but the host university and state agency cooperators are typically afforded more influence.

There are several suggestions that applicants can follow to enhance their chances for success in attaining a Unit position. First, follow directions and closing dates exactly for the federal submittal, as any deviation or late applications will disqualify your application. Be extremely thorough in describing your skills and credentials, including even basic skills and accomplishments that biologists may take for granted. If you are in doubt about the application procedures, you should call the personnel office in the announcement. It is also wise to contact the corresponding Unit Leader to express interest and find out more about the opening. It may be beneficial to provide to the Unit Leader an additional packet of information that may include a cover letter summarizing your interest and special qualifications, a curriculum vitae, and any other helpful documents (e.g., representative publications). This will make the Unit Leader and local cooperators aware that you applied to the federal office, because staff in the personnel office are not scientists, and they may not prioritize the list of candidates the same as those scientists in the Unit or cooperating parties. If you are invited to interview, you should be prepared to visit with cooperating agency administrators or biologists, as they will participate in the selection process. Also, be sure to prepare your seminar with both academic and agency audiences in mind. Familiarity or experience with the Cooperative Research Units Program will be viewed favorably by cooperators.

If you are selected for and offered an Assistant Leader position, the degree of negotiation for specific employment terms is limited. The federal grade level (salary) is fixed unless you have substantial postdoctoral experience, and then is only slightly flexible. You should generally expect only modest start-up funds, but the federal government provides some moving expenses even for new employees. At most Units, the state cooperating agency is eager to work with new Unit scientists, and a grant award from them for a specific research project is a reasonable expectation. Other grant-funded hiring at Coop Units follows typical university procedures and protocols and involves direct contact with the hiring Unit scientist (e.g., graduate students; see Chapter 3).

The Cooperative Research Units Program is committed to improving diversity among scientists in the fisheries field. Efforts toward this end include consideration of demographics in filling Unit scientist positions and in admitting graduate students to pursue studies under the direction of Unit scientists. One initiative to facilitate the education and employment of underrepresented groups by the federal government and USGS is the Student Career Experience Program (SCEP; see also Chapter 14). Students in SCEP may receive tuition or stipend assistance while in school and then may be non-competitively hired in a federal agency within 120 days of completion of their academic program. The intent of the program is to improve diversity in federal agencies, but anyone is eligible to participate and Unit scientists and students have used this program.

## **Parting Advice**

Cooperative Research Units blend agency and academic goals, perspectives, and work environments, both in positive and negative aspects. Unit scientist positions are well suited for those who are comfortable spanning both environments, and they can be extremely rewarding. It is worth noting that other federal and state agencies have developed similar cooperative units and fisheries positions on select university campuses (e.g., U.S.D.A. Forest Service, National Marine Fisheries Service/NOAA Fisheries), but the USGS program is the most

permanent and comprehensive. These positions are challenging, intellectually and personally. They typically require substantial interpersonal communication, and disappearing to your office or laboratory is not a possibility. They are also not a means to avoid tenure review in the academic setting; Unit scientists are reviewed for promotion to the same standards as faculty in their home department.

Hiring in Cooperative Research Units tends to be cyclic and tracks federal budgets, so it is important to keep informed and look for vacancies constantly, as several may be advertised at once following a prolonged period of no hiring. When considering which Units are of interest, young professionals should bear in mind that transferring to a position in another Unit is possible after attaining an Assistant Leader position. Such transfers are not simply non-competitive relocations, and Unit scientists must apply and compete for vacancies at other Units, but a Unit scientist is usually at a competitive advantage based on their knowledge and experience. Conversely, Unit scientists may be less competitive for university tenure-track faculty vacancies in some cases, as they may be perceived as agency scientists.

No two Units are alike; they vary with resources, personalities, and dynamics among cooperators, so it would be wise for prospective scientists to do their homework to understand the nuances of individual Units of interest. The best approach to learning more about employment in the Cooperative Research Units Program is to interact with scientists currently in those positions and gain insight from their experiences. Most will be willing to share a candid discussion with you on their position, those at other Units, and how to achieve your professional goals.

## **Sources of Additional Information**

General information about the Cooperative Research Units Program and links to individual Unit web sites are available on the program's web site (<http://www.coopunits.org>). You can also obtain additional information by contacting:

Chief, Cooperative Research Units  
U.S. Geological Survey  
12201 Sunrise Valley Drive  
Mail Stop 303  
Reston, Virginia 20192  
Phone: (703) 648-4260  
Fax: (703) 648-4269

Information about opportunities with USGS through the Student Career Experience Program is also available online (<http://www.usgs.gov/ohr/student>). Federal job announcements, including Unit scientist vacancies, are posted on the USAJOBS web site (<http://www.usajobs.opm.gov>; see also Chapter 5).

## References

- Goforth, W. R. 2006. The Cooperative Fish and Wildlife Research Units Program. Special Publication, U.S. Geological Survey, Cooperative Research Units, Reston, Virginia.
- Scott, J. M., F. Davis, B. Csuti, R. Noss, B. Butterfield, C. Groves, H. Anderson, S. Caicco, F. D'Erchia, T. C. Edwards, Jr., J. Ulliman, and R. G. Wright. 1993. Gap analysis: a geographical approach to protection of biological diversity. Wildlife Monograph 123.