

## **Personal Recollections on the Origins of Federal Wetland Training**

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In the mid- to late 1970's, Richard A. (Dick) Macomber became personally concerned about the low level or lack on ecological knowledge of Corps of Engineers staffers regarding wetlands, especially those planning Corps projects including writing environmental impact statements. At the time, Dick was a GS-14 biologist working for the Corps' Board of Rivers and Harbors. He had an abiding personal interest in wetlands. (He once told me he was the first biologist the Corps ever hired.) To remedy the problem, Dick used his extensive Corps connections and influence to establish the first of what grew to become a considerable, creditable series of intensive short courses for employees of the Corps of Engineers. Macomber's premier course started off as a 3-week total immersion course called "Wetland Specialist".

As a direct result of the July 1975 NRDC et. al v. Calloway decision in the Federal District Court for Washington, DC ordering the Corps to expand its regulation to include wetlands under Section 404 of the Clean Water Act (then known as the Federal Water Pollution Control Act), the Corps began looking for people with strong backgrounds in wetland ecology. I was hired as a Federal employee on October 1, 1975 to work with the Corps' New England Division (NED) Regulatory (Permits) Branch primarily to identify and delineate wetlands and defend my decisions if the Corps got sued. This pre-dates the writing of any official "wetland delineation manual". My interest in wetlands was sparked by my intense interest in waterfowl and anything pertaining to the habitat that supported them including the plant communities. So this wetlands topic with the Corps was a natural match. By 1976, I had heard about the "Wetland Specialist" course and asked to take it. My boss kindly said, "Couldn't you teach that course?" I said that I could teach some of it but that I'd heard they were doing all sorts of stuff with soils that I needed to learn about. He said, "Maybe so, but we can't spare you for three weeks." I annually repeated my request to no avail.

In October of 1978, I left NED to take a research position with the Corps' Waterways Experiment Station (WES) in Vicksburg, MS. My new boss was agreeable to letting me attend the "Wetland Specialist" course but I'd have to wait my turn. There were five or six people in line ahead of me and they typically only sent one person per year. Although I never forgot it, I pretty much gave up ever getting to the course and focused on my research monitoring habitats, including wetlands, constructed of dredged material and, ironically, helping with the writing of the Corps Wetland Delineation Manual.

By this time, Macomber's "Wetland Specialist" course had developed almost mythical status among Corps' biologists as *the* class to have attended and passed (yes, it was graded and the grades were sent the employee's supervisor). Survivors were known as "Macomber's Marsh Muckers" and they even had their own T-shirts. (I felt left kind of left out.) As a result, before there were "wetland scientists", we were unofficially known as "marsh muckers". Dick typically conducted two 3-week courses each summer. They were housed first at the Virginia Marine Science Consortium dormitories and later at the NASA Goddard Space Center dormitories (much nicer) both in Wallops Island, VA. Within a 50 mile radius Dick and his contractors had located marvelous wetland field sites of all kinds ranging from freshwater to salt. Sites were located on Eastern Shore locations and included private property, the Wallops Island NASA and Naval facilities, Chincoteague National Wildlife Refuge, and the Assateague Island National Sea Shore to name a few. In one classic exercise, Dick brought the class by boat to the middle of the Pocomoke River and put them over the side with a Rite-in-the-Rain notebook and a pencil. The students had to swim a transect to and through the adjoining swamp and all intervening wetland and other habitats sketching a detailed profile and writing habitat descriptions as they went. Eventually, they would find themselves on an upland dirt road where they would be picked up by a van. Dick always felt that if you really wanted to understand a wetland, you had to experience it from the water upslope rather than from the upland down slope.

As an interesting sidelight, it was Macomber's dream to institute a "Society of Wetland Scientists". About a dozen of his student disciples were captivated by the idea and primarily through his and their Corps and other federal contacts, the dream came to fruition. By popular acclaim, they wanted Dick to take the first Presidency. Dick declined on the basis that he didn't have a Ph.D. and he thought that should be a requirement of the first President in order to give the new Society appropriate scientific stature. After he convinced one of his prime contractors, Dr. James F. (Jim) Parnell of UNC Wilmington, to accept nomination for the Presidency, Dick acceded to the founding member's desire that he at least be the first Vice-President. Thus the Society of Wetland Scientists was launched. (By the way, our long-serving, long-suffering, second Secretary-Treasurer, David DuMond was also one of Macomber's contractors working with Jim Parnell to teach the "Wetland Specialist" course.) I think we (SWS Members) owe all of them a lot. (By the way, I was privileged to chair a historical panel on the history of SWS at the 25<sup>th</sup> Annual Meeting in Seattle in July of 2004. We were able to get together many of the original founding members and most of the Past Presidents who providing a fascinating oral history of SWS. Unfortunately, Dick Macomber had passed away and wasn't present.)

By 1981, Dick Macomber had been promoted to GS-15. At that point he was dealt a crushing blow when his supervisors told him he would no longer be able to spend his summers mucking around the marshes with students—even smart ones. The "Wetland Specialist" course had been trimmed to two weeks in length and other courses had been developed, but the wetland training was being reorganized. The Corps' Huntsville Training Division administered the courses but now WES was tasked with Technical Coordination of the courses including content, course materials, selecting

training locations, providing instructors, and quality control. In July of 1981, I found myself as Technical Coordinator of wetland training for the Corps. (How that happened is a story in itself.) I became the inheritant of Dick Macomber's courses and all the foundation work he had done. Fortunately, we got along. For years, we invited Dick to spend as much time as he could beg, borrow, or steal to be with us but he in most years he could only spent part of a day during which he usually gave an important talk on professional ethics for wetlanders (and other federal employees).

When Macomber started training for the Corps, most of his students were from Corps' Planning Divisions. However, the immediate, critical need for sound knowledge of wetland science for the rapidly expanding Corps' Regulatory (Permits) Program shifted the student base. In 1981 when I took over, more than half the students were from Regulatory. By the time, I left the Corps (and Federal Service) in 1989, most of the students came from Corps Regulatory offices.

The educational theory behind the Corps wetland training courses was directly from an Army training model. We had people that needed to learn new skills or hone old ones to a sharper edge. We didn't have the time to send them back to school for a semester, but we could afford a week. Under a total immersion format in the right circumstances, the Army found it possible to cram a 40 hour course into a 5-day format—and get it to stick. The Corps courses for which I was responsible between 1981 and 1989 included “Wetland Specialist” (later known as Regulatory V), Wetland Science and Technology, Wetlands of the U.S., Wetland Construction and Restoration, Wetland Executive, Wetland Soils and Hydrology, and Regulatory IV (Basic Wetland Delineation). All of these were 5-day courses except for Wetland Executive (3-days) and Regulatory V—Wetland Specialist (2 weeks).

By the mid-1980's, EPA (i.e. the EPA Regulatory counterpart to Corps Regulatory) had become impressed with the field ability of trained Corps staffers. At the time, the agency did not have its own internal training capability. As a result, I was requested to organize and conduct wetland training courses for EPA. However, as more courses were requested by EPA and the Corps ability was stretched as far as the leadership was willing to stretch it. As a result, I was ordered to help EPA develop its own in-house training capability. I turned over all of our course materials, spent considerable time explaining to the EPA instructors-to-be what we did and *why* we did it, what we found that had worked, and what we found had not. From this beginning, the EPA training program began.

In the 8½ years I was the Corps Wetland Training Coordinator (from 1981 to 1989), the courses were very popular but always had a maximum attendance limitation, usually 30 students (an effort to maintain the quality of experience for field oriented courses). Because of the demand, the Corps had a priority list of who got in. Corps employees got first choice. Other federal employees got second choice. Other non-federal government employees got third choice. After that, non-government employees got last choice IF there were any slots left and if they were willing to jump through all the red tape hoops necessary to get registered. In those 8½ years, I only remember three

private sector individuals who ever made it into any of those wetland courses although I was conducting 12 to 16 courses per year.

From the time the Corps starting expanding its regulatory jurisdiction to include wetlands in 1975, Corps staff conducted all jurisdictional wetland delineations. By the late 1980's, the full significance of the program was being realized. It had expanded and evolved to the point that it was no longer practical for the Corps to do more than spot check delineations conducted by others, primarily wetland consultants. Corps Districts began issuing guidance letters suggesting that although the Corps would still do delineations for free, they would be conducted on a Corps timetable (i.e. we'll put you on the list but with the current backlog, don't expect to see us for 3 or 4 years). If landowners wanted a more timely response, they should hire competent consultants to do the wetland delineation after which the Corps would come and spot check the work and verify its adequacy. This generated a whole new field of endeavor providing well-paying jobs that we not even imagined when I was in graduate school. Unfortunately, there was virtually no applied wetland training available to for private sector. More and more requests for training of private sector individuals kept coming to WES. I kept asking "the powers that be" to allow me to offer more sessions so some of the private sector folks could get training, but I kept getting answers like, "well, you don't understand--we are a research organization not a training organization". I kept thinking, "maybe that's so, but somebody should be doing this".

By March of 1989, a whole bunch of little reasons added up to the decision that I needed a change from the federal government. However, I really liked doing the training. So, along with a group of other ex-federal employees, we co-founded the Wetland Training Institute, Inc. in 1989—a for profit private business. (A few of us also formed a separate consulting firm, Wetland Science Applications, Inc.) Our goal was to offer the same kind of quality wetland instruction available to the Corps to anyone who wanted take to it. We have been teaching a steady stream of professional "students" ever since, and certainly, we are not the only private company that offers training. In a typical class of 20 to 30 students, about 75% will be private sector and 25% will be public sector (mostly from state and local agencies). Most will have at least a bachelor's degree if not a masters and currently will be working full time in a professional position (usually for a consulting firm). Most will have academic backgrounds in biological or environmental science although there will inevitably some individuals with other science or engineering backgrounds. We also get the occasional surveyor, attorney, or graduate students hoping to enhance their resume. Virtually all are looking for practical application training that can be applied directly on their jobs. (Theory only or "from the book" recitation without real world, practical examples of "how exactly does this apply" do not play well with this audience.)

In a way, I've always been surprised that we still have customers. When we started the Wetland Training Institute, Inc., I thought we might do well for 4 or 5 years but by then, the Universities would have recognized the importance of this training and would have implemented programs to provide it in a more cost efficient way than could my organization thus supplanting us. Now, to my continued amazement, 18 years later,

very few universities have done so and we are still going strong. It's not that the universities can't provide this kind of training, and the few that do, seem to do a fine job. However, I think that unless you have a staff member or an adjunct that actually dirties his or her hands in the real world of consulting, working with real people, on real projects, involving real money (theirs or yours, NOT from the taxpayers, an endowment, or a grant), how wetland science actually applies in the real world is a fog. In a work environment in which bad data, bad analysis, or bad decisions actually hurt real people, the peer review of constant, usually adversarial regulatory agency review or cross-examination by opposition attorneys is a refining fire alien to most academics. (By the way, I *am* assuming here that everyone involved is doing their level best to be good scientists objectively providing accurate and complete data and telling the truth—not working as *advocates or lobbyists* where objective truth is subordinated to advancing a preconceived position.)

Thus, I think, the importance of this training is lost on the average University. Interestingly, I am aware of three creditable University programs, two in the Pacific Northwest and one in the northeast that have good reputations but they achieve a large part of their success by hiring out instruction to respected private sector consultants or agency staffers. One other observation is that the training that is most in demand satisfies the need to respond to one or more regulatory requirements. (Nobody will pay me simply to go have a nice day in the wetlands. I wouldn't be hired at all if someone didn't have a need to satisfy a legal or regulatory requirement.) So the abilities to stay in compliance with regulations (that often change, sometimes rapidly) or how to design a profitable development project that is environmentally sensitive enough to comply with all the laws and get a permit are and will continue to be in demand. So will training that shows people how.

To the best of my knowledge, after I left federal service, the Corps wetland training program has continued to chug right along. For more details, however, you might want to contact some of my old co-workers like Bob Lazor at WES (now Engineering Resource and Development Center, ERDC) in Vicksburg who basically serves in the type of role of Technical Coordinator for wetland training as did I. Also, I believe Jim Wakeley and Ellis J. (Buddy) Clairain also participate in organizing some of the training.

On the topic of certification, I'll offer the following observations. The first SWSPCP certifications for Professional Wetland Scientist and Wetland Professional in Training were conferred at the Annual Meeting in 1994. The program traces back to the year that Gene Silberhorn came in as SWS President and the Annual Meeting was in Washington, DC (1987). A number of us had been grouching about the need for a professional certification program and as chief (or most vocal) grouse, Gene turned around made me Chair of the then new Certification Committee. It took a while to get the Board of Directors to take the program seriously. Thanks, primarily, to Ronnie Best (a professor who also did consulting in the real world and understood why this program was significant), we finally got the Board's attention. The certification program was

officially accepted by the Board and authorized as the last outgoing official action the year Ronnie Best was President.

On another topic, in Section 307(e) of the Water Resources Development Act of 1990, Congress required to the Corps to explore the possibility of establishing a Wetland Delineator Certification Program. The Corps published a series of proposed rules in the Federal Register regarding how they planned to test and possibly implement to program. In 1993, three Corps Districts were selected to experiment with testing: Baltimore, Seattle, and Jacksonville. Each of these Districts offered a written test to interested volunteers. If the candidate passed the written test, he/she could take the field test. If the candidate passed the field test, he or she was “provisionally” certified as a wetland delineator. (I took the tests and passed—thank goodness. They were difficult.) The program was experimental and voluntary. If you didn’t take the tests, you were not excluded under Corps’ rules from doing wetland delineation work. There’s more to the story than this, but after the testing year was completed, the Corps reported to Congress that they had experimented with a certification program as requested and claimed they had worked the bugs out of it. They knew how they would go about implementing a full scale program—and how much additional manpower and money it would take to do it. The Corps also reported that they were ready to implement the program--as soon as Congress authorized the additional personnel and funding necessary to run the program. Congress did not authorize any additional funding or manpower, so the program essentially sits on permanent hold. Since the testing in Baltimore, Seattle, and Jacksonville in 1993, there has been no formal effort to certify wetland delineators by the Corps.

Last year (2005), both Virginia and Minnesota instituted a certification program for wetland delineators. I do not know about the Virginia program, but Harold Jones is actively involved. Check with Harold. However, last year, I personally took the testing for the Minnesota Wetland Delineator Certification Program. Minnesota only required a passing a written test. I passed, paid my money, and got certified. The test was similar to the kind of written test the Corps used in their 1993 experimental program. I’ve heard that New Hampshire has had a program for a while, but I don’t know any of the details about it.

That’s about all I have to say at the moment. I hope it will be of some use to you. However, I can provide you with more background or detail on any of this if you should need it.

--Charlie (8/10/06)