Statement

of

Robert J. Pierce, Ph.D.
Wetland Training Institute, Inc.

before the

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Committee on Environment and Public Works
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on

THE CURRENT REGULATORY AND LEGAL STATUS OF FEDERAL JURISDICTION OF NAVIGABLE WATERS UNDER THE CLEAN WATER ACT IN LIGHT OF THE ISSUES RAIZED BY THE SUPEME COURT IN *SOLID WASTE AGENCY OF NORTHERN COOK COUNTY v. U.S. ARMY CORPS OF ENGINEERS* NO. 99-1178

June 10, 2003

Mr. Chairman and members of the Subcommittee, thank you for this opportunity to speak today on this very important topic. In January, 1989, after fourteen years with the Corps of Engineers (Corps), the last seven in the Regulatory Branch at Corps Headquarters, I and a group of other wetland resource professionals and a former Department of Justice attorney left federal service and formed the Wetland Training Institute, Inc. (WTI) to provide both the public and private sector with water resource training and reference tools.

While with the Corps, I was principal technical monitor for the Wetlands Research Program and two research programs dealing with contaminated dredged material, was proponent for two wetland training courses, routinely taught in two other courses on regulatory policy, was responsible for the continued development of the Corps' wetland delineation procedure and was one of the three Corps representatives on the committee which developed the 1989 Manual for Identifying and Delineating Jurisdictional Wetlands (1989 Manual). In addition, I drafted many policy documents, provided technical and policy guidance to its districts and divisions and represented the Corps at numerous meetings within the government, professional societies and the general public.

During the last dozen years, I have taught wetland delineation and jurisdictional policy to thousands of individuals in both the public and private sectors. In addition, as a consultant with Wetland Science Applications, I have applied the delineation and permitting process to real life projects proposed by the regulated public. I am a Professional Wetland Scientist and Certified Wetland Delineator. I have conducted wetland work in 37 states and the Territory of Guam. I have

seen the wide variety of areas that technically qualify as true wetlands as well as the types of areas which often are regulated as wetlands but that differ little functionally from uplands of similar habitat type and, in my opinion, do not actually satisfy the 1987 Delineation Manual. Increasingly in recent years, I have been called upon to provide expert witness testimony for citizens being prosecuted under the Clean Water Act (CWA). I have spent my entire professional career working with the federal wetland permitting program.

The Section 404 program has become more draconian as time has matured it. Previous Congresses have been unwilling to make meaningful changes and the Executive Branch has continuously expanded its jurisdiction onto private lands and at the same time reduced the effectiveness of the permitting program by making it so convoluted and complex that it is a full-time job to sort it out. Until the recent Supreme Court Ruling on SWANCC and the DC Circuit Ruling on Tulloch, the Judicial Branch has most often "given deference" to the Executive Branch and furthered tightened the noose around the public's collective neck.

As the SWANCC decision has correctly pointed out, under the CWA and the Constitution, there are limits to what the federal government can regulate. Ours is a three-branch government. It is not for the Executive Branch to write laws or ignore judicial rulings. Yet for years, the Executive Branch has continuously and inconsistently altered its jurisdictional limits and regulation of private lands without any change in mandate from Congress. The Judicial took the Executive to task in its decision on the "Tulloch Rule:"

> In a press release accompanying the adoption of the Tulloch Rule, the White House announced: "Congress should amend the Clean Water Act to make it consistent with the agencies' rulemaking." White House Office on Environmental Policy, *Protecting America's Wetlands: A Fair, Flexible, and Effective Approach* 23 (Aug. 24, 1993). While remarkable in its candor, the announcement contained a kernel of truth. If the agencies and NWF believe that the Clean Water Act inadequately protects wetlands and other natural resources by insisting upon the presence of an "addition" to trigger permit requirements, the appropriate body to turn to is Congress. [American Mining Congress v. United States Army Corps of Engineers, 951 F.Supp. 267 (D.D.C. 1997); aff'd sub nom, National Mining Association v. United States Army Corps of Engineers, 145 F.3d 1339 (D.C. Cir. 1998)].

Since the "migratory bird rule" was shot down by the Supreme Court, the "migratory molecule rule" has risen to take its place. The new mantra for many Corps districts is "follow the drop of water." If the ordinary high water mark (OHWM) is no longer perceptible - follow the drop of water. If sheet flow might occur over upland areas - follow the drop of water. If water flows through a roadside ditch - follow the drop of water. If the water flows through a stormwater system (or what EPA might euphemistically call an "underground ditch") - follow the drop of water. If an old aerial photograph or topographic map gives the slightest hint that a natural channel might have been located anywhere in the vicinity - follow the drop of water.

There are those that argue that there are virtually no isolated wetlands - most are connected either by infrequent sheet flow across the surface or by groundwater. The technically correct statement, however, is that there are virtually no isolated "lands," whether wet or not. Technically, it is well-established that all water is interconnected on the earth. The "hydrologic cycle" has been

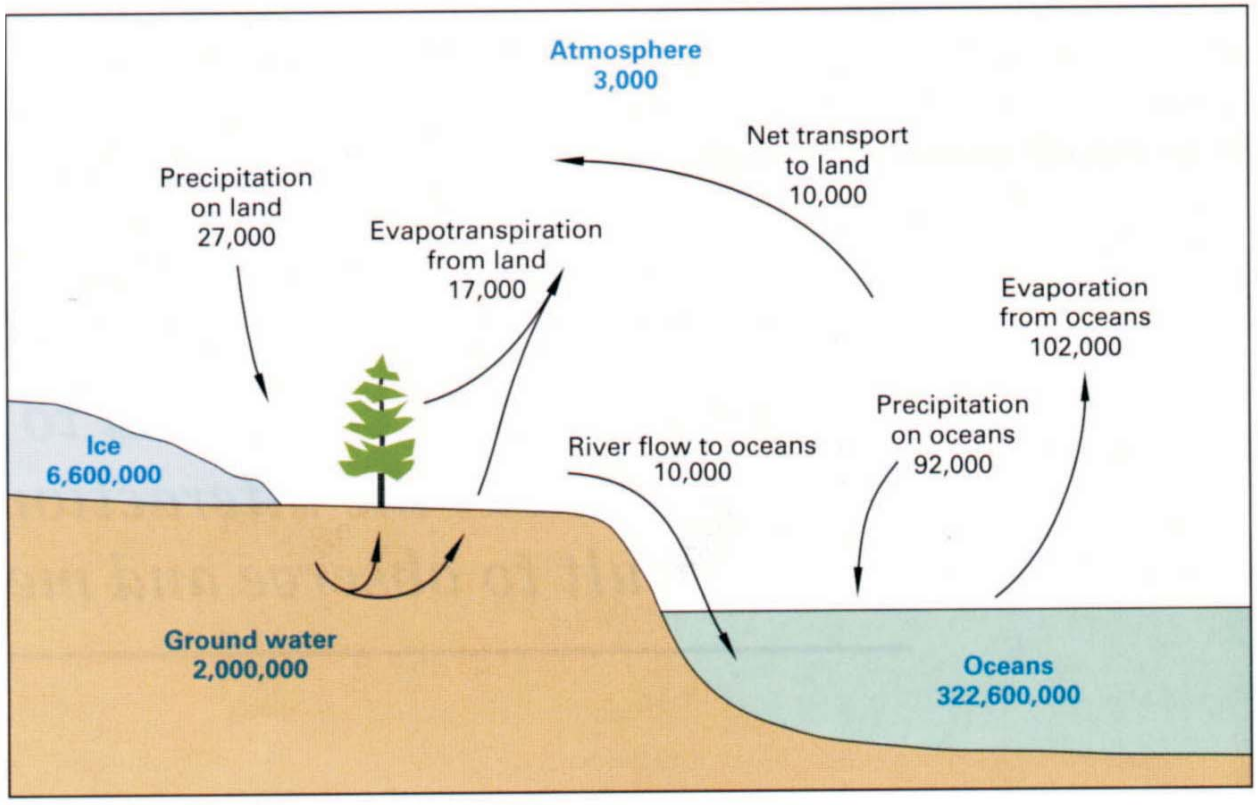

Figure 1. Hydrologic cycle from Winter et al. (1999).

recognized by hydrologists for decades and constitutes the starting point for every published general discussion of hydrology (e.g., Dunn and Leopold 1978, Heath 1982, and Leopold 1994). Winter et al. (1999) provides a simplified diagram (Figure 1) and discussion of the interactions of the various "pools" of water that comprise the cycle. They state:

> The hydrologic cycle describes the continuous movement of water above, on, and below the surface of the Earth. The water on the Earth's surface-surface water-occurs as streams, lakes, and wetlands, as well as bays and oceans. Surface water also includes the solid forms of water - snow and ice. The water below the surface of the Earth primarily is ground water, but it also includes soil water.
>
> The hydrologic cycle commonly is portrayed by a very simplified diagram that shows only major transfers of water between continents and oceans, as in Figure 1. However, for understanding hydrologic processes and managing water resources, the hydrologic cycle needs to be viewed at a wide range of scales and as having a great deal of variability in time and space. Precipitation, which is the source of virtually all freshwater in the hydrologic cycle, falls nearly everywhere, but its distribution is highly variable. Similarly, evaporation and transpiration return water to the atmosphere nearly everywhere, but evaporation and transpiration rates vary considerably according to climatic conditions. As a result, much of the precipitation never reaches the oceans as surface and subsurface runoff before the water is returned to the

atmosphere. The relative magnitudes of the individual components of the hydrologic cycle, such as evapotranspiration, may differ significantly even at small scales, as between an agricultural field and a nearby woodland.

At the federal level, ground water is regulated through the Safe Drinking Water Act. The Corps has consistently and correctly taken the position that it does not regulate ground water. Since sheet flow can occasionally occur over almost every land surface (slide 24 attached), and water flowing over any surface can accumulate sediment which can then be carried into channels and on to navigable waters. If the Corps is trying to regulate all surface flows of sediment into waterbodies, then it should not only regulate those areas called "wetlands" that are connected by sheet flow. If we call all areas where water may occasionally sit or flow on the surface of the land "navigable waters" then Section 404 should apply uniformly across virtually every square foot of the United States and its territories. This would be far more logical than regulating some ditches but not others and some plant communities but not others.

Examples of Inconsistent or Erroneous Applications of Corps Policy

There are two sources of concrete examples of the inconsistency that abounds in the Corps regulatory program that I have tapped: decisions in cases that have been finalized under the Administrative Appeal process codified at 33 CFR 331 and other cases that may not have been appealed formally, but which were the subject of strong debate between property owners, their consultants and local Corps districts.

I reviewed all (50) of the jurisdictional decision (JD) Administrative Appeal (AA) decisions that were posted on the Corps web sites as of the date of the Advanced Notice of Proposed Rulemaking (ANPRM). The Corps AA review officers' (RO) decision documents demonstrate "in their own words" the inconsistencies of interpretation of the regulations from district to district that have resulted from the lack of sound foundation and structure related to jurisdiction. Tables 1 is a list of the location and nature of the AA examples. Table 2 is a list of other cases that I have compiled. The following are some examples of the numerous inconsistencies that are common within the 404 Program.

Adjacent vs Isolated Wetlands

The most obvious issue arising from SWANCC and one of the most common reasons for jurisdictional AAs is the argument whether a morphologically disconnected landscape feature is isolated or adjacent. Long distances, sheet flow and proximity to subsurface drain tiles have all been used to claim that a wetland is adjacent to a tributary water of the U.S.

A very disturbing trend is seen in a number of AA related to the issue of what constitutes a connection to a tributary - connection by sheet flow. In Continental 127 Fund, LLC (Table 1, AA19) and Baccarat Fremont Developers (Table 1, AA8), the Corps used sheet flow from disconnected wetlands to claim jurisdiction even though the Corps recognized that there was neither an OHWM or continuous wetland connection.

Similarly, in CS 7 and CS 8 (Table 2), the only connection to a tributary was by sheet flow into a ditch. In CS 8 (Table 2) the Corps went on to say that the hydrologically disconnected wetland was "contiguous ... irrespective of any past or existing permanent man-made changes in landscape

features...” based on the presence of hydric soils. The Corps did not care that the hydric soils may have been naturally relict, whether the soils actually supported wetlands within the life or the CWA and whether 33 CFR 328.5 had any meaning. “Once 404, always 404,” seems to be the current motto of the COE in many locations.

The distance separating “adjacent wetlands” from tributaries varies greatly, but in many cases goes beyond the fundamental concepts encompassed in the definition of “adjacent” at 33 CFR 328.3 (c), which was intended to capture those wetlands separated from tributaries by narrow features. Several districts have over the years established local policies on separation. Wilmington and Buffalo Districts considered 200 - 300 ft and 200 ft, respectively, as the inclusion zone for adjacency. The then New England Division (1991) established an 800-ft inclusion zone.

Many of the Corps districts operating in the lower Mississippi Valley utilize the entire width of the 100-year floodplain as the inclusion zone for adjacency. Galveston District, as clarification after the U.S. v Wilson decision, issued guidance on February 13, 2001, stating that on the mainland, the 100-yr floodplain generally constitutes the inclusion zone, although they also have a “two-barrier” policy which states that a wetland is isolated even within the floodplain if there are two barriers separating it from a tributary.

Galveston District employed the “two-barrier rule” in the Reaves Administrative Appeal (Table 1, AA44). The RO upheld the use of the “rule” when he decided that the appeal did not have merit in part because the property was separated from Galveston Bay by only one barrier - a road.

Jacksonville District has recently taken the position that a wetland is jurisdictional if it will overflow from storm of 10-year recurrence frequency; it is connected if no more than one foot of relief exists between wetlands; or if it is within 500 ft of a tributary. Jacksonville District is still undecided about an isolated wetland that is more than 1000 ft from the Atlantic Ocean, eight months after a request for a “no permit required” verification (Table 2, CS 10).

Jacksonville District, in a public presentation entitled “SWANCC Update and Aftermath,” redefined the term “isolated” to be “ Those wetlands whereby the waters could not reach navigable waters via surface flow or are not in close physical proximity to other waters of the United States.” It clarified that adjacent waters which only can be wetlands and explained that “adjacency is a physical relationship, near, bordering, neighboring that needs to be relatively close to ‘parent’ water of the US.”

In Golden State Developers (Table 1, AA6) two “adjacent wetlands” one, 1950 feet and other 3,400 feet distant from an intermittent stream were jurisdicitonal although the Corps did not assert jurisdiction over 100-ft wide, concrete-lined water supply canal. The RO found that the appeal had merit because of insufficient documentation. The Corps claimed jurisdiction over one wetland which was 3400 feet upstream on a nonjurisdictional drainage because flow could travel down the nonjurisdictional tributary to a jurisdictional tributary. A second wetland was determined to be close enough at 1950 feet distance and “with sufficient precipitation Wetland EW-2 could form a continuous surface water connection with Stream W-1" to claim jurisdiction. After the AA decision, the District modified JD, however, the details are not on the Web.

In Baccarat Fremont Developers (Table 1, AA8), the San Francisco District based it jurisdictional call in part on the fact some wetlands were adjacent to other wetlands not tributaries.

The district argued that sheet flow ties the wetlands together. The Administrative Appeal RO determined that the appeal had merit since the District decision was not supported by substantial evidence and that only wetlands that form a "wetland continuum or complex" can be considered adjacent to the major waterbody. The RO cited the preamble discussion from the 1991 NWP publication (56 FR 59113, 1991). The District subsequently supplemented its documentation but the substance of which was not provided on the Web.

In Leavell/Grey (Table 1, AA9), Sacramento District claimed jurisdiction over two physically separated wetlands that were in proximity to two ditches. The RO determined that the appeal had merit and directed the District to reconsider and document if the wetlands are adjacent to any jurisdictional water body. Corps decided that a 13.79 A wetlands was adjacent to a ditch that had replaced a historical tributary even though the ditch had been filled downslope and their remained no connectivity. A similar scenario existed at Sun City Lincoln Hills in California (Table2, CS2).

Tributary

The issue of "what is adjacent" cannot be separated from the concept of "what is tributary." Natural tributaries that currently exist on the landscape in more or less unaltered form (that is not radically channelized) generally can be readily recognized. The decision related to such natural tributaries is whether the stream channel is jurisdictional to the full longitudinal extent of a perceptible OHWM or whether federal jurisdiction stops at some point short of the channel head. While the answer to this question is a legal issue, there are technical rationales explaining why the answer to the question should be that in many inland cases it stops short the full length of a perceptible OHWM as currently defined. They are discussed in a technical report provided electronically.

There are a number of concepts that must be addressed related to the issue of what is tributary. These concepts occur as recurring themes within the universe of the case studies that I have reviewed and within the realm of the Administrative Appeal decisions that have been finalized. Heading the list is the term OHWM. I have prepared a report on the science relative to the concept and made it available electronically.

What, if anything, constitutes a tributary in a less-than-natural form is the subject of numerous disagreements between land-owners and the Corps. Both cases that have been submitted to the AA process (Table 1) and those that have not (Table 2), reveal much about the lengths to which some Corps districts will go to claim jurisdiction. These cases are just the tip of the iceberg.

Jacksonville District, in a public presentation entitled "SWANCC Update and Aftermath," summarized the practicable application of Corps policy as "follow the drop of water." Contiguous wetlands are those which are physically connected to navigable waters by a surface water connection with an OHWM or a continuum of wetlands. If there is evidence of a former stream, now in culverts, then a feature is tributary, not isolated.

Ordinary High Water Mark

One of the most fundamental problems with determining jurisdiction is the use of the term ordinary high water and OHWM to define the upstream or longitudinal limit of 404 jurisdiction. The term OHWM was "borrowed" from the Section 10 program where it was only used to define

the lateral limits of a traditionally navigable waterway — the longitudinal limit under Section 10 is defined by the limit of navigation. There is no independently-defined, longitudinal limit for the Section 404 Program. The term OHWM may be an acceptable lateral limit in waters that are otherwise found to be jurisdictional if it is redefined to be quantitatively determinable and consistent with court rulings, but it is not an appropriate concept for defining the upstream limit of Section 404 jurisdiction.

33 CFR Part 328.3 (e) defines the OHWM as:

> (e) The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

In Molycorp (Table 1, AA7), the Los Angeles District determined that a desert wash that discharges into an isolated, ephemeral lake was jurisdictional because the wash was "hydrologically connected but not morphologically connected." The District said that it considered the OHWM in a "watershed context." The District did not describe the size or timing of the annual or seasonal surface flow representing the hydrologic connection that it asserted was present. The primary evidence of this surface water connection provided by the District in the Administrative Record and at the appeal conference is that the Molycorp Inc. property is at a higher elevation than Ivanpah Lake, and that the water must flow down gradient and therefore must reach the lake. The AA Review Officer determined that the District in determining if an OHWM existed must consider:

> ...concentrated surface and subsurface flow (not groundwater) and biological responses of plants and animals to concentrated flow..

But "subsurface flow" is ground water and ground water is regulated under the Safe Drinking Water Act. Furthermore, plants/animal response has no bearing on jurisdiction. The fact that plants grow better in a riparian zone is not determinative with regards to jurisdiction.

Most disturbingly, the Review Officer concluded that an OHWM was not necessary to continue jurisdiction through a 1000 - 1500 ft distance to capture the desert wash upstream of the isolated dry lake. The RO opined:

> However, in this specific instance, I conclude that the District's policy position that a tributary connection can exist in the absence of a continuous ordinary high water mark is reasonable.

How can it be reasonable when the regulations at 33 CFR 328.4, unambiguously state:

> In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark [51 FR 41251, November 13, 1986].

Even more explicit is the statement in the Preamble to 33 CFR 328.4:

> Section 328.4(c)(1) defines the lateral limit of jurisdiction in non-tidal waters as the ordinary high water mark provided the jurisdiction is not extended by the presence of

> wetlands. Therefore, it should be concluded that in the absence of wetlands the upstream limit of Corps jurisdiction also stops when the ordinary high water mark is no longer perceptible [51 FR 41217, November 13, 1986].

Furthermore, the Corps used the presence of surface water that extended 20 feet into Nevada after a storm event with a 10-year recurrence frequency to conclude that the morphologically isolated dry lake bed was subject to interstate commerce and, thus, Section 404.

The OHWM should be described as that elevation on the bank where water flows during the wetter part of the year but not during storm or flood flows - certainly not a storm with a 10 year recurrence frequency. This harkens back to the 1972 definition that the Corps promulgated. Thus it would describe the channel in which water flows after a storm surge has passed and the water has receded and is flowing clear. The Corps Regulatory Guidance Letter (RGL) 88-06, issued June 27, 1988 (now expired but still applicable), discussed the ordinary high water mark (OHWM) as follows:

> OHWM: The OHWM is the physical evidence (shelving, debris lines, etc.) established by normal fluctuations of water level. For rivers and streams, the OHWM is meant to mark the within-channel high flows, **not the average annual flood elevation** that generally extends beyond the channel [emphasis added].

This concept is elucidated in the ruling in *U.S. v Pend Oreille Public Utility Dist. No. 1,* 926 F.2d 1502 (9th Cir. 1991) which held that the ordinary high water line marked the boundary between riparian land and riverbed, and that the line corresponded with the highest level normally reached each year, excluding the annual spring rise:"

> In calculating ordinary high water line, both federal and Washington state law mandate **exclusion of annual spring floods** and;
>
> "High water line" for a river **did not include annual spring flood**; right of state to riverbed was limited to line of ordinary high water level and not line of highest water that could be proved [emphasis added].

The ruling in *Pend Oreille* also cited back to *U.S. v. Claridge*, 416 F.2d 933, 934 (9th Cir. 1969) and followed the *Howard v. Ingersoll*, 54 U.S. (13 How.) 409, 14 L.Ed. 189 (1851) Supreme Court ruling rejecting:

> the **mistaken assumption that the annual spring floods** of the river determined the ordinary high water line [emphasis added].

The ruling in *U.S. v. Harrell*, 926 F2.d 1036 (11th Cir. 1991) found that:

> Evidence failed to establish that tributary of navigable river was below "ordinary high water mark," for purposes of determining whether tributary was within "bed" of river and subject to Government's navigational servitude... and
>
> Debris and litter left from temporary and unpredictable floodwaters, unlike that left from ordinary high water, was not evidence of ordinary high water mark of navigable

> river, for purposes of determining whether tributary was subject to Government's navigable servitude...

Thus, a history exists in both regulation and case law, which can be used to quantifiably defineOHWM. Unfortunately, since 1977, the Corps has never revised the definition of OHWM to reflect these legal positions that can in fact be measured empirically in the field. To this day it relies upon subjective language to implement the concept.

The flow, which most accurately depicts what the courts have expressed conceptually as the OHWM, is the width of the channel that carries the mean annual discharge (or flow). As Leopold (1994) points out, "the mean annual flow of a river is equaled or exceeded 25 to 30 percent of the time, or about 91 to 109 days a year, so about 265 days a year the discharge is less than the average value. In other words, the average discharge is a rather large flow." The mean annual flow is routinely computed for all gaged streams in the United States and can be derived from regression equations that the USGS has developed over the last several decades for ungaged streams. The term OHWM should be redefined to specify the width of the channel, which carries the mean annual flow.

In dryland landscapes that lack the dense vegetative cover characteristic of the humid climes, debris lines and small orientations of soil particles resulting from water movement are more readily obvious than where dense vegetation prevails. Furthermore, many dryland channels do not have flow on an annual basis. Therefore, regulation (which has increased dramatically in recent years) of small rills and other ephemeral manifestations of overland flow in the dryland southwest is an inequitable and arbitrary extension of jurisdiction based upon climatic conditions that are dramatically different between east and west. From a regulatory standpoint, a landowner would be unable to complete any project in this desert landscape without authorization from the Corps - this though it is virtually certain that little if any of the precipitation that does fall will ever reach a navigable water hundreds of miles away. Neglecting to consider these differences in trying to reach a consistent, defensible policy on jurisdictional limits for the 404 program will doom the effort to assured failure.

In the King Ranch AA (Table 1, AA1), the appellant argued just the point made in all of the legal decisions, i.e, that jurisdiction should be based on "ordinary or annual flow" not on an OHWM based on water flows during floods or extreme conditions. The RO dismissed the appeal as having no merit and ruled:

> The USACE recently addressed using an "ordinary flow" to establish jurisdiction in place of an ordinary high water mark in the response to public comments in the preamble to the "Final Notice of Issuance and Modification of Nationwide Permits," Federal Register Vol. 65, No. 47, March 9, 2000, page 12823. Public commenters had asserted that ephemeral waters lacked sufficient flows to establish an ordinary high water mark and that using peak flows and/or flood stages in lieu of ordinary flows, or using cut banks, shelving, or debris that was influenced only by peak flows or flooding, was inappropriate. **The USACE rejected using an "ordinary flow" to establish jurisdiction in place of an ordinary high water mark** (FR Vol 65, No. 47, page 12823) and stated that ephemeral streams are waters of the United States, provided they have an ordinary high water mark meeting the definition in 33 CFR 328.3(e). The

> USACE stated that the frequency and duration at which water must be present to develop an ordinary high water mark has not been established for the USACE regulatory program. The USACE further stated that district engineers are to use their judgment on a case-by-case basis to determine whether an ordinary high water mark is present [emphasis added].

In Sunrise Office Park AA (Table 1, AA3) near Tuscan, Arizona, a situation similar to Molycorp, the Los Angeles District claimed jurisdiction of an ephemeral wash that empties into a water detention basin of a new residential housing development. This 200 feet long by 60 to 120 feet wide basin is drained by a 60 foot long, 6 inch diameter underground culvert. The 6 inch culvert then connects to an approximately 1 foot wide channel. This 1 foot wide channel connects to a concrete channel, which then reconnects to a natural channel with an ordinary high water mark, which meanders southwest through several single-family home residential areas to Magee Road. The ordinary high water mark becomes indistinct at several locations between the project site and Magee Road where the desert wash follows or crosses paved surfaces. These road crossings act as conduits of the water and maintain the tributary connection. There was no indication that the Corps even attempted to find out the frequency and duration that the roads had to be closed to traffic because of flowing water?

The Appeal was found to have no merit and the RO citing 33 CFR 328.4 (c)(1), concluded that:

> [t]he evidence in the administrative record as clarified by the site visit and appeal conference clearly support the District's conclusion that there is a tributary connection between the desert wash on the Appellant's project site and waters of the United States.

In the Valley Vista AA (Table 1, AA5) in Arizona, the owner argued that a wash and man-made impoundment lack current jurisdiction because there was no OHWM downstream of impoundment. The Corps claimed that prior to 1952 there was a 2-mile long wash with an OHWM that connected it. The RO found the appeal had merit and ruled that the impoundment could not be ruled jurisdictional based upon a connection that only existed prior to the CWA. The final action of the District is still pending.

Highly permeable soils and high evapotranspiration (ETo) in dryland environments means that many channels which display a morphologically continuous OHWM, may not be connected except during very infrequent, high-flow events. Thus, "marks" are not necessarily "ordinary."

Constructed Drainage/Irrigation Ditches

In the preamble to the 1986 Corps regulations, the Corps stated that:

> ...we generally do not consider the following waters to be "Waters of the United States." However, the Corps reserves the right on a case-by-case basis to determine that a particular waterbody within these categories of waters is a water of the United States. EPA also has the right to determine on a case-by-case basis if any of these waters are "waters of the United States."(a) Non-tidal drainage and irrigation ditches excavated on dry land. (b) Artificially irrigated areas which would revert to upland if the irrigation ceased [51 FR 41217, November 13, 1986].

In the 2000 Notice on NWPs (FR) the Corps amended that policy (without benefit of the APA process) to indicate that "ditches cut **entirely** in upland...." Furthermore, the Corps stated that ditches that connect one water of the U.S. to another water of the U.S. may be jurisdictional.

Ever since the SWANNC decision there has been an ever increasing reliance upon ditches excavated in upland conditions to be the tributary that results in a determination of jurisdiction. In some cases, the districts have determined that the ditches themselves are not jurisdictional, but the wetlands that are either connected to them or only adjacent are. In the Krejci AA (Table 1, AA38), the Omaha district permitted the state highway department to divert a stream into a roadside ditch and then several years later, the district found that a nonconnected wetland on another property was adjacent to the roadside ditch which was now a "tributary" and therefore, jurisdictional. In this case the Corps approved one action that increased the jurisdictional limits on another property.

The fact that the Corps regulates some ditches and not others, immediately forms a venue for arbitrary and capricious behavior from individual regulator to regulator and from district to district across the Nation. The arbitrary application of ill-defined policies and definitions feeds the "it's jurisdictional because I say it's jurisdictional" syndrome. The fact that the Corps does not regulate all ditches denigrates any argument that it must regulate some to prevent pollution of navigable waters.

In the Leavell/Grey AA (Table 1, AA9), Sacramento District claimed historic connection by a natural tributary that was replaced by two ditches. In doing so, the District reversed its own jurisdictional determination that it had taken on one of the ditches on an adjoining piece of property. Because the ditch had been determined nonjurisdictional for the earlier project on the adjoining property, it had been filled, removing all connectivity with any natural waterbody. The RO determined that the appeal had merit and directed the District to reconsider why regulation of these two ditches is an exception to the general rule that ditches aren't regulated. The Corps decided one ditch and 1.196 acre wetland were not jurisdictional, but the other ditch, the one with severed connectivity, was jurisdictional and the 13.79 acre wetland near it was adjacent and jurisdictional.

In the Kukal AA (Table 1, AA10), the Sacramento District determined that an irrigation channel that also served as a drainage channel during storm events was a tributary. The District agreed that much of the runoff in the watershed above the ditch had been diverted but that it did not alter its jurisdictional status. The RO determined that the appeal did not have merit.

Piped Flow

Districts have taken the concept of piped flow of a natural stream to the extreme. In the Pal Group AA (Table 1, AA15), the Chicago District found that drain tiles under a farm field where sufficient connection to make an adjacent property jurisdictional because the Corps found a blueline channel indicated on a 1923 topographic map in the vicinity of the project. Chicago District reasoned that the subsurface drain tiles replaced the blueline stream. The AA Review Officer determined that the appeal had merit because the District's administrative record was inadequate.

In the Lundstrom AA (Table 1, AA18), the Chicago District used 1925 and 1940 USGS topographic maps to determine that a blueline channel was in the vicinity of the project and had been replaced by drain tiles. Since the appellant had not provided evidence that the underground

pipes did not replace the stream, the Review Officer determined that appeal did not have merit. Furthermore, because present day topography might be expected to differ from past, the Review Officer did not find merit with the argument that there is a two-ft topographic rise between the wetland and the tributary isolating it.

Use of Historic Maps and Photographs

It is very evident from a review of cases, that districts are basing an ever increasing number of questionable decisions on what they perceive to be present after reviewing very old topographic maps and in some cases old aerial photographs. This trend is subverting the concept of normal circumstances. In regulatory Guidance Letter 86-9, the Corps stated:

> ...it is our intent under Section 404 to regulate discharges of dredged or fill material into the aquatic system as it exists and not as it may have existed over a record period of time.

Districts, in their quest for maximum land use authority, assume that there is jurisdiction even if there is no factual basis to support it. In a case in Ohio that I worked on, the tributary status of a roadside ditch was called into question. The Corps regulator indicated that he would check early topographic maps and aerial photographs to determine if an historic channel existed in the vicinity of the ditch. When asked what his default position would be if he found no evidence of an historic channel, he indicated that he would assume that there was one. I told him not to bother looking at old documents? It was clear that he would conclude that the ditch was jurisdictional irrespective of what could be seen on the old aerial photographs.

Old topographic maps do not need to depict a channel or even contour lines to be sufficient "proof" that an historic channel existed. In CS 5 (Table 2), the Sacramento District relied upon a 1909 USGS Quadrangle to decide that a natural ephemeral channel existed for an additional half mile up to the property under consideration prior to the excavation of an ephemeral irrigation/drainage ditch. The Quadrangle depicted neither contours nor a channel to support their contention. Even after the connection through the ditch had been severed on a downslope neighboring property, Sacramento District asserted that the animal waste holding ponds physically isolated but adjacent to this ditch were jurisdictional. To take jurisdiction over two constructed, animal waste treatment ponds even though they are 100-feet away from and not connected to an excavated ditch because the ditch might have replaced a hypothetical ephemeral channel that has not if ever existed for decades and which had since been partially filled, severing all connectivity, is an arbitrary and absurd abuse of federal authority.

Two fundamental flaws exist with the Corps's propensity to justify all jurisdiction as a tributary. First, blue lines on USGS Quads are unreliable. Leopold (1994), Emeritus Professor of Geology at UC Berkley and former Chief Hydrologist for the USGS writes:

> I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by nonprofessional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic.

Thus, the Corps should not be giving great weight to old maps, which used far-less accurate mapping procedures than are currently available today and personalized aesthetics to depict stream courses, to assert federal jurisdiction over private property.

Second, even if an historic channel existed, the principle of "once navigable, always navigable" does not apply to nonnavigable waters under Section 404 of the CWA. Corps regulations at 33 CFR 328.5 states:

> Permanent changes of the shoreline configuration result in similar alterations of the boundaries of waters of the United States. Gradual changes which are due to natural causes and are perceptible only over some period of time constitute changes in the bed of a waterway which also change the boundaries of the waters of the United States. For example, changing sea levels or subsidence of land may cause some areas to become waters of the United States while siltation or a change in drainage may remove an area from waters of the United States. Man-made changes may affect the limits of waters of the United States; however, permanent changes should not be presumed until the particular circumstances have been examined and verified by the district engineer. Verification of changes to the lateral limits of jurisdiction may be obtained from the district engineer.

In CS 5 (Table 2), Sacramento District decided that a permit was not needed to fill a ditch, presumedly because it had already been legally filled downslope and, thus, disconnected from any natural waterbody. Defying all logic, however, Sacramento District determined that a permit would be needed to fill the animal waste ponds that were 100 feet distant from a nonjurisdictional, isolated, excavated ditch.

Ephemeral Channels

Ephemeral channels in all climes generally form under the same landscape conditions - sparse or no vegetative cover. The presence of a dense cover of vegetation on the land surface, softens the impact of raindrops (the initiator of erosion) and binds the soil in place through the network of roots and generally prevents the formation of channels. When the vegetative cover is sparse as naturally occurs in dryland conditions (*e.g.*, the southwest) or on sites that have been filled with subsoils low in organic matter and nutrients, or bare soils resulting from clear-cutting of mature forests or scraping or rutting of the land surface, erosion can occur at a rapid rate. The channels that form generally are deeply incised and carry runoff water only during and immediately after rain events or snowmelt.

Under dryland climatic conditions, and absent any other perturbation, the vegetation cover remains sparse and erosion continues at rates determined by such factors as intensity of storm event, soil characteristics and slope. Channels that form under dryland conditions may not be in response to surface erosion, but may actually result from the collapse of subsurface tunnels and debris slides among other causes. Once formed, however, such ephemeral channels will continue to carry water (and high loads of eroded sediment) during and shortly after storm events until obliterated by some more catastrophic event.

In the more humid climes, in most cases, a depauperate land cover is usually transient. Unless chemical contamination or very steep slopes are present, weed species rapidly colonize the bare soil

and the landscape passes through a well-documented progression of serial stages until a climax forest (100-years or more distant from the bare soil condition) results in a stable plant community. Generally, it is only during the very early stages of such succession, that ephemeral channels that formed during bare-soil conditions actually carry water except under the most severe events.

CS1, CS6, CS8 and CS13 (Table 2) and AA7 (Table 1), identify situations where barely definable flow-paths have been regulated by the Corps. In CS13, two channels were regulated that exist only because channelized runoff from a road has been directed across private property. Natural drainage ways would not have existed except for the "artificial" source of water.

Impoundments

Impoundments usually are formed by constructing a dam across a channel, constructing a berm across a swale or valley and/or excavating a depression. The Corps has long held that constructing a dam across a water of the U.S. expands jurisdiction to the entire impoundment [33 CFR 328.3 (a)(4)]. On the other hand, the Corps also holds that:

> ...we generally do not consider the following waters to be "Waters of the United States." However, the Corps reserves the right on a case-by-case basis to determine that a particular waterbody within these categories of waters is a water of the United States. EPA also has the right to determine on a case-by-case basis if any of these waters are "waters of the United States."
>
> > (c) Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
> >
> > (d) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
> >
> > (e) Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (see 33 CFR 328.3(a)) [51 FR 41217, November 13, 1986]

With regards to (e) above, the Coprs, in it 2000 Notice (65 FR 12860) on NWPs, indicated that with regards to mining activities, a 10-year period was an appropriate length of time until a wet, mined feature is considered abandoned and thus, jurisdictional. This raises the legal issue of whether the Corps has any authority to regulate any body of water or wetland that arises from intentional or incidental human activities that alter the landscape.

The manner in which Corps districts treat impoundments varies through a wide spectrum of actions. In Valley Vista (Table 1, AA5), the AA RO found that a stock pond appeared to be constructed in the upland and was connected by a ditch cut in the upland and, therefore, lacking a special reason, the impoundment should not be regulated. Conversely, in CS 3 (Table 2), the Jacksonville district determined that a borrow pit dug in uplands that drains through an upland

outfall ditch, to roadside ditch, to second roadside ditch, to third roadside ditch and finally to San Carlos Bay (a distance of ~ one mile) was jurisdictional, presumably because a drop of water entering the borrow pit could reach navigable waters.

In Memphis Stone & Gravel (Table 1, AA36), the Review Officer concluded that the purpose of ponds (in this case erosion control and livestock watering) was immaterial. The pond that had an OHWM was jurisdictional and the one that did not was not. Vicksburg District adjusted the JD to conform with the ruling.

Similarly, in both Laycom, Inc. (Table 1, AA13) and Desert Moon Shadow Estates (Table 1, AA4), the AA RO upheld the Chicago and Los Angeles Districts' determinations, respectively, that the presence of an OHWM, whether the result of historical or current conditions, was adequate that both an intentionally constructed flood retention pond and a bermed impoundment were part of a tributary system and as such the appeal had no merit.

In CS 5 (Table 2), the Sacramento District determined that two constructed, animal-waste impoundments were jurisdictional because they were located within 100-ft of a ditch that may have been an ephemeral drain (based upon a 1909 topographic map that showed neither contours nor a blueline channel) that they concluded was tributary to a jurisdictional water. The ditch was determined to lack jurisdiction under current conditions because an legal fill severed connectivity slope from the ponds. Nevertheless, the waste ponds remained jurisdictional.

In CS 6 (Table 2), the Los Angeles District, originally asserted jurisdiction over two completely isolated, constructed in upland stormwater ponds whose drainage basins consisted of 20 acres of abandoned airfield runways and whose inflow was regulated by a valved inlet structure. After considerable negotiation on the legality of the JD determination, the Corps decided to only regulate vegetated patches in one of the basins and authorized the discharge of fill into the vegetated patches under a NWP.

In Jacksonville District, the Corps has found that stormwater ponds are jurisdictional, or in the case were the ponds were constructed in uplands, that jurisdiction can pass from the outfall ditch, through the ponds and through upslope ditches to wetlands. Thus, even if the pond itself is not regulated, the Corps will capture isolated wetland if a ditch is constructed from the wetland to the pond.

New Theories and/or New Terminology

A review of jurisdictional determination, indicates that since the *U.S. v. Wilson* decision and subsequent guidance (May 29, 1998) distributed by EPA and Corps headquarters, many Corps districts have become much more "creative" in the reasons that they use for asserting jurisdiction under Section 404. The trend is to find connection through any means possible. If connectivity is the key to Corps jurisdiction, then scientifically a reasonable argument can be made that 100 percent of the landscape is jurisdictional because all water is connected. For a program where the rules have not been overhauled in 17 years, it is amazing the number of new theories or terms that continuously creep into Corps decisions. Here are a few new concepts that were prominent in my review.

In Molycorp Inc. (Table 1, AA7), the Los Angeles District considered the OHWM in a "watershed context." The RO directed the District to consider OHWM in terms of annual and seasonal flow, concentrated surface and subsurface flow (not groundwater) and biological responses of plants and animals to concentrated flow.

In Baccarat Fremont Developers (Table 1, AA8), the San Francisco District based it jurisdictional call in part on the fact some wetlands were adjacent to other wetlands not tributaries. The district argued that sheet flow ties the wetlands together. The Administrative Appeal RO determined that the appeal had merit since the District decision was not supported by substantial evidence and that only wetlands that form a "wetland continuum or complex" can be considered adjacent to the major waterbody. The RO cited the preamble discussion from the 1991 NWP publication (56 FR 59113, 1991).

The insertion of the word "complex" into the consideration of adjacency is inappropriate, NOT consistent with the 1991 NWP publication and contravenes the language of 33 CFR 328.3(a)(7). The context of the 1991 *Federal Register* discussion was related to whether a continuous wetland should be subdivided from the major waterbody to attempt to determine where the flow is less than 5 cfs and thus, headwaters. The pertinent passage is:

> In systems where there is a broad continuum of wetlands, all are considered adjacent to the major waterbody to which it is contiguous. This type of broad system should not be dissected for purposes of determining where the 5 cfs point does or does not exist as it is hydrologically and ecologically part of the same system and should be treated as a whole [56 FR 59113, 1991].

The use of the term "continuum" was simply an attempt to change the accusative form of the word "contiguous" to the nominative case. Perhaps the grammatically better choice of terms would have been "contiguity," however, "continuum" is the more common expression of the concept. A "complex," however, as commonly used ecologically and in the context of landscapes, means a grouping of different but related features. An area that is a mix of intermingled wetlands and uplands could be referred to as a "complex" or more correctly a "wetland/upland complex." Thus, the justification for regulating a wetland that is adjacent to another wetland that is separated by upland because it is a "complex" is totally inconsistent with the meaning and I believe the intent of the *Federal Register* statement.

The "complex" theory also was the basis in part for the Buffalo District's decision in NEC Transit/Williams, LLC (Table 1, AA41) which was upheld by the Administrative Appeal RO. The RO's decision was based in part on:

> The District observed that Wetland F had no discernible outlet for water flow and no evidence that water ever flows from the wetland. However, Wetland F is in close proximity to Wetland A and the other wetlands, and contains similar vegetation and soils. Wetland F is determined to be in the same ecosystem and adjacent to other wetland areas.
>
> The non-hydric soil area between Wetland A and B was disturbed before the July; 5, 2001 site visit.The brush and trees had been cut and removed by large equipment The earth and soils were partiallydisturbed, tracked., and scuffed by the activity However,

> coupled with past site visit reports and maps there was enough of the area remaining undisturbed to determine the soils were not hydric. Wetland A has a location where water flowed from the lowest point in its rim but had no discernable channel or wetland soils in the area where water overflows. Water overflows rarely or with such low velocities that it leaves no evidence of flow through erosive forces. The length of time the flow occurs is so short that no saturated soils are created. However, since the Corps representatives and others observed water flowing at that location, the district determined that wetland A is not isolated but a tributary to the wetland complex. Also Wetland A is a closely related part of the same ecosystem complex. The character and relationship of Wetlands A and F with the other wetland areas is strongly influenced by the geomorphology and climate of the area. The area is relatively flat with a land type that contains similar wetlands, some functioning continuously as feeder streams and some nearly isolated so that they flow only in heavy rainfall events where water accumulates and overflows to lower areas. From an ecological standpoint, there is no separation of any of the wetland areas on the project site. As noted above, the Corps' ecological judgment about the relationship between waters and their adjacent wetlands is a sufficient basis for making a jurisdictional determination regarding adjacency.

Ecologically, ground and surface-water form a "continuum" throughout the landscape. The "complex" theory taken to an ecological limit justifies regulating the entire watershed of each jurisdictional tributary. The regulatory program, however, is not an ecological study, but the implementation of policy based on law and supported by science. Regulation of private property is not based upon ecology but upon the police powers of the state granted by the constitution and balanced by socioeconomic considerations. The jurisdictional limit expressed at 33 CFR 328.3(a)(7) is based upon policy considerations and any alteration of it should be based upon APA rulemaking.

In Hemet, California (Table 2, CS7), the Corps claimed jurisdiction over roadside ditches because they "intercept water that otherwise would be jurisdictional."

In Desert Moon Shadow Estates (Table 1, AA4), the Corps used the "vitality of plants in the vicinity" to assert jurisdiction over ephemeral desert washes.

In Golden State Developers (Table 1, AA6) the Corps determined that a wetland, which was 3400 feet upstream on a nonjurisdictional drainage, was jurisdictional because flow could travel down this nonjurisdictional tributary to a jurisdictional tributary.

Interstate, Intrastate and Commerce Clause Connections

The nature of commerce is discussed at 33 CFR 329.6. What constitutes interstate commerce is a legal issue that is addressed by the Corps at 33 CFR 328.3(a)(3) and the preamble to this part at 51 FR 41217. It is in essence, the fundamental issue that has driven this Advanced Proposed Rulemaking. The Supreme Court in SWANCC has told us that at least the use by migratory birds is NOT interstate commerce. The issue of what constitutes interstate commerce was the subject of several administrative appeals.

In the Potlach Corp. AA (Table 1, AA11), Walla Walla District ruled that a wetland that had grown up in an abandoned, isolated, intrastate, nonnavigable pond used in the past to hold logs at a

mill was sufficient nexus to interstate commerce to be jurisdictional even though, the process currently used in the mill did not permit logs to be held in a pond. The RO ruled that the appeal had merit because the District provided no reasonable evidence that the wetland could be used in the future for holding logs related to interstate commerce.

What constitutes interstate waters is the subject of several of the cases evaluated for this report. At 33 CFR 328.3(a)(2), the Corps simply states that "All interstate waters including interstate wetlands" are waters of the U.S. The Corps discusses the extent of its jurisdiction under Section 10 of the RHA relative to crossing state lines at 33 CFR 329.7:

> A waterbody may be entirely within a state, yet still be capable of carrying interstate commerce. This is especially clear when it physically connects with a generally acknowledged avenue of interstate commerce, such as the ocean or one of the Great Lakes, and is yet wholly within one state. Nor is it necessary that there be a physically navigable connection across a state boundary. Where a waterbody extends through one or more states, but substantial portions, which are capable of bearing interstate commerce, are located in only one of the states, the entirety of the waterway up to the head (upper limit) of navigation is subject to Federal jurisdiction.

Three important facts arise from this statement: first there must be the capability of navigation in the waterbody, second their must be interstate commerce conducted and third, that federal jurisdiction stops at the head of navigation.

In Molycorps Inc. (Table 1, AA7), the Los Angeles District ruled that Ivanpah Lake, an ephemeral waterbody and all washes flowing into it was jurisdictional because water from it extended 20-30 feet into Nevada from California at one point. The entire basis for jurisdiction of this physically isolated feature was that the landscape features consistent with the current definition of OHWM extended across a state boundary. However, it is unknown what the recurrence frequency of inundation is in this desert playa lake associated with the landscape features attributed to the OHWM.

More fundamental, however, in Molycorp, Inc. is the lack of any actual commerce attributed to navigation on Ivanpah Lake in any portion, in either state. Interstate commerce was determined to exist solely on the basis of the OHWM crossing the state boundary.

In CS1 (Table 2) the Santa Cruz River in Arizona was determined to be an interstate waterbody because it headwaters which originate in southeastern Arizona flow south into Mexico for a short distance and then turn back north and continue flowing only in Arizona. Topographically, the defined channel of the Santa Cruz River ends on the large alluvial plain known as the Santa Cruz Flats. The Corps maintains that water can continue to flow from the Santa Cruz River, into the Gila River (an intrastate waterbody) and then to the Colorado which flows south through Mexico and discharges into the Gulf of California.

The nature of the interstate connection on the Colorado River and the upper reach of the Santa Cruz River is very different from that on the lower reach of the Santa Cruz River. In the case of the Colorado River and the upper reach of the Santa Cruz River, a very reasonable case can be made that pollutants that are discharged in the United States could cross an international boundary and adversely effect the waters of another country. In the case of the lower Santa Cruz River, i.e., from

the point at which the River reenters the United States, there can be no effect on another country of a pollutant discharged into it, since the flow remains entirely within Arizona. Absent any effect on interstate commerce, can the lower Santa Cruz River be legitimately defined as an interstate water or is their an upper limit to the commerce connection similar to the head of navigation under Section 10 of the RHA.

Compounding the issues associated with the lower Santa Cruz River is the fact that after the River reenters the United States, it flows through the Tohono O'odham Indian Reservation prior to reaching the Tucson metropolitan area. This raises the issue of whether water that flows entirely within one state but through tribal lands can legally be deemed to be interstate waters with an effect on interstate commerce.

Conflicting Determinations

As discussed above, in Molycorp Inc. (Table 1, AA7), the Los Angeles District maintained that washes which don't have a continuous OHWM for the last 1000 - 1500 feet before reaching the ephemeral Ivanpah Lake were jurisdictionally connected. However, in the same time period at Moorpark, California (Table 2, CS8), the same reviewer for the Corps found that "Nearly all of these ephemeral drainage courses exhibit an ordinary high water mark (OHWM) at higher elevations, but the OHWM for each disappears at lower elevation, presumably because of insufficient hydrology in light of the porous substrate, on-site vegetation, and reduced slopes" and declined to take jurisdiction. In the Molycorp Inc. project, the Corps would have lost control over a large tract of land, whereas in the Moorpark project, where the owner wanted the Corps to assert jurisdiction, the District avoided having to deal with the Endangered Species Act (ESA) by declining jurisdiction and left the owner having to go through the more arduous ESA Section 10 permit process, than Section 7 consultation.

Wetlands

The single-most debated issue throughout the long and often-volatile history of deciding what is a "wetland" for regulatory purposes, is the issue of the frequency, duration and proximity to the land surface of water. In 1991, when Congress prohibited expenditure of funds (through the Water Resources Appropriation Bill of 1992) in reliance upon the 1989 wetland delineation manual, the Corps reverted to its 1987 delineation manual. Since only wetlands (not open water bodies) that are simply neighboring (i.e., no surface connection through a wetland or a channel) can be regulated as "adjacent" (33 CFR 328.3), it is also crucial to a reasoned interpretation of SWANCC to specify the frequency, duration and proximity to the land surface of water necessary to constitute a jurisdictional wetland.

The "official" requirement on paper that is in effect today is elucidated in the 1987 manual and in the guidance questions and answers published by the Corps headquarters in 1991 and 1992. In pertinent part they provide the following:

> For an area to accurately be characterized as having wetlands hydrology, it must be frequently inundated or saturated to the surface for long duration. The requirement that a site be inundated or saturated to the surface either permanently or periodically is stated in Part I: Technical Guidelines of the 1987 Manual:

The following definition, diagnostic environmental characteristics, and technical approach comprise a guideline for the identification and delineation of wetlands: Diagnostic environmental characteristics:

> Hydrology. The area is inundated or saturated either permanently or periodically at mean water depths < 6.6 ft. or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation [p.9].

The 1987 Manual defines the term "saturated soil conditions," a term which is taken directly from the definition of wetland (33 CFR 328.3b), as:

> A condition in which all easily drained voids (pores) between soil particles in the root zone are temporarily or permanently filled with water to the soil surface at pressures greater than atmospheric [page A11].

Thus, saturated soil conditions only exist from the water table down. The capillary fringe above the water table, being caused by surface tension, i.e., negative pressure, does not meet the definition. The water table is defined in the 1987 Manual as:

> The upper surface of ground water or that level below which the soil is saturated with water. It is at least 6 in. thick and persists in the soil for **more than a few weeks** [p. A14, emphasis added].

The 1987 Manual contains numerous other statements clarifying what constitutes wetland hydrology including:

> The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. ... Such characteristics are usually present in areas that are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic soil conditions" [p.34].

Although the length of time that an area must be inundated or saturated to the surface can vary according to the hydrological/soil moisture regime, the 1987 Manual provides guidance as to the duration of saturation required for a site to have wetlands hydrology at Table 5 [p. 30]. In summary, Table 5 indicates that areas that are saturated more than 12.5 percent of the growing season have wetland hydrology while those that are saturated for less than 5 percent of the growing season do not. It further states that many areas that are saturated between 5 and 12.5 percent of the growing season are not wetlands [emphasis added].

The term 'Duration (inundation/soil saturation)' is defined as:

> The length of time during which water stands at or above the soil surface (inundation), or during which the soil is saturated. As used herein, duration refers to a period during the growing season [p. A4].

On October 7, 1991, Corps headquarters issued Questions and Answers on 1987 Corps of Engineers Manual (Studt 1991) to further clarify the concept. The answer to Question 8 in pertinent part states:

> Generally speaking, areas which are seasonally inundated and/or saturated to the surface for more than 12.5 % of the growing season are wetlands. Areas saturated to the surface between 5% and 12.5% of the growing season are sometimes wetlands and sometimes uplands. Areas saturated to the surface for less than 5% of the growing season are nonwetlands. ... If an area is only saturated to the surface for a period of between 5% and 12.5% of the growing season and no clear indicators of wetland hydrology exist (i.e., recorded or field data; also see answer #7 above), then the vegetation test should be critically reviewed. ...The actual number of days an area is inundated and/or saturated to the surface for an area to be called a wetland varies [p. 4].

The presence of surface water or near-surface ground water for short duration at frequent intervals or at infrequent intervals for long duration during the growing season, does not constitute wetland hydrology. In fact, the definition of nonwetlands in the 1987 Manual specifically addresses this point:

> Nonwetlands include uplands and lowland areas that are neither deepwater aquatic habitat, wetlands, nor other special aquatic sites. They are seldom or never inundated, or if frequently inundated, they have saturated soils for only brief periods during the growing season [p.15].

The 1987 Manual defines "Frequency" (inundation or soil saturation) as:

> The periodicity of coverage of an area by surface water or soil saturation. It is usually expressed as the number of years (e.g., 50 years) the soil is inundated or saturated at least once each during part of the growing season per 100 years or as a 1-, 2-, 5-year, etc., inundation frequency [p. A5].

Thus, the three "official" documents that specify the hydrology requirements for a jurisdictional wetland can be stated as on average, an area must be inundated or the soils saturated to the surface in more than half the years (1 out of 2, 5 out of 10, or 50 out of 100) for more than 12.5 percent of the growing season to conclude with reasonable certainty that the area has wetland hydrology.

Unfortunately, when the Waterways Experiment Station placed an electronic version of the 1987 manual on the World Wide Web in the late 1990s which purportedly included the 1991 and 1992 question and answer guidance, it subverted the hydrology "criterion." In an apparent effort to retain as much of the philosophy that engendered the 1989 Manual's inclusiveness, the hydrology "criterion" was summarized as and government-sponsored training courses are based upon the following statement:

> ... an area has wetland hydrology if it is inundated or saturated to the surface continuously for at least 5% of the growing season in most years (50% probability of recurrence).

In practice today, many Corps regulators in routine matters and EPA and DOJ in enforcement matters maintain that all that is required for an area to be deemed to have wetland hydrology (and

thus, almost invariably be called a wetland) is that saturation be present anywhere within the top 12 inches of the soil for 5 percent of the growing season every other year - concepts very similar to those set forth in the 1989 Manual. For example, Lichvar *et al.* (2002) incorrectly attributes a 1 - 2 week duration (5 percent of the growing season) to Corps headquarter's guidance from March 1992. (See also Administrative Appeal Decisions: Mr. Allen Gordon, Table 1, AA48; Tammany Holdings, Table 1, AA28.)

It defies credulity to believe that an area that is saturated at say 11 inches below the surface for seven days out of 730 days (every other year) will function in any manner different than the surrounding landscape that is nonwetland. Certainly no credible research has ever shown such to be the case. The practical application of these mythical "thresholds" subverts the provision of the 1992 Water Appropriations Act which prohibited the Corps from spending any of its regulatory budget in reliance upon the 1989 Manual until it had been subjected to the APA process - which has never occurred.. While it can be debated whether water present every other year is consistent with the judicial rulings in *Pend Oreille* and *Howard v. Ingersoll,* at least such a "criteria," in theory, is quantifiable, although in practice, the vagaries of annual precipitation patterns often require a complicated analysis.

Disingenuous Promises and Lack of Responsiveness

While the Corps and EPA are very quick to propose rulemaking that has an expansive impact on Section 404 jurisdiction, they continuously make then disregard promises made to the public as well as actions mandated by the Congress that would have a limiting effect on jurisdiction. On January 24, 1990, the Corps disseminated a joint EPA/Corps memorandum entitled *Clean Water Act Section 404 Jurisdiction over Isolated Waters in Light of Tabb Lakes v. United States.* In it they stated:

> "Instead, the EPA and Corps intend to undertake as soon as possible an APA rulemaking process regarding jurisdiction over isolated waters."

They never did.

On May 29, 1998, in a memorandum entitled *Guidance for Corps and EPA Field Offices Regarding Clean Water Act Section 404 Jurisdiction Over Isolated Waters in Light of United States v. James J. Wilson* they stated:

> In the near future, EPA and the Corps intend to promulgate a rule addressing the jurisdictional issues discussed in this guidance, with full opportunity for public review and comment.

They never did.

The Water Resources Appropriations Act of 2001 provided over $125 million dollars for the Corps Regulatory program. Expenditure of that money required eight specific tasks of the Corps:

> For expenses necessary for administration of laws pertaining to regulation of navigable waters and wetlands, $125,060,000, to remain available until expended: Provided, That the Secretary of the Army, acting through the Chief of Engineers, is directed to use funds appropriated herein to:

(1) by March 1, 2001, supplement the report, Cost Analysis For the 1999 Proposal to Issue and Modify Nationwide Permits, to reflect the Nationwide Permits actually issued on March 9, 2000, including changes in the acreage limits, preconstruction notification requirements and general conditions between the rule proposed on July 21, 1999, and the rule promulgated and published in the Federal Register;

(2) after consideration of the cost analysis for the 1999 proposal to issue and modify nationwide permits and the supplement prepared pursuant to this Act and by September 30, 2001, prepare, submit to Congress and publish in the Federal Register a Permit Processing Management Plan by which the Corps of Engineers will handle the additional work associated with all projected increases in the number of individual permit applications and preconstruction notifications related to the new and replacement permits and general conditions. The Permit Processing Management Plan shall include specific objective goals and criteria by which the Corps of Engineers' progress towards reducing any permit backlog can be measured;

(3) beginning on December 31, 2001, and on a biannual basis thereafter, report to Congress and publish in the Federal Register, an analysis of the performance of its program as measured against the criteria set out in the Permit Processing Management Plan;

(4) implement a 1-year pilot program to publish quarterly on the U.S. Army Corps of Engineer's Regulatory Program website all Regulatory Analysis and Management Systems (RAMS) data for the South Pacific Division and North Atlantic Division beginning within 30 days of the enactment of this Act; and

(5) publish in Division Office websites all findings, rulings, and decisions rendered under the administrative appeals process for the Corps of Engineers Regulatory Program as established in Public Law 106-60;

(6) Provided further, That, through the period ending on September 30, 2003, the Corps of Engineers shall allow any appellant to keep a verbatim record of the proceedings of the appeals conference under the aforementioned administrative appeals process;

(7) Provided further, That within 30 days of the enactment of this Act, the Secretary of the Army, acting through the Chief of Engineers, shall require all U.S. Army Corps of Engineers Divisions and Districts to record the date on which a section 404 individual permit application or nationwide permit notification is filed with the Corps of Engineers; and

(8) Provided further. That the Corps of Engineers, when reporting permit processing times, shall track both the date a permit application is first received and the date the application is considered complete, as well as the reason that the application is not considered complete upon first submission.

To the best of my knowledge the Corps has complied with only three of the eight requirements and has otherwise not complied with the deadlines established in the 2001 Appropriations Act for Cost Analysis Supplement (1), Permit Processing Management Plan (2), Report to Congress (3), Publish Data Pilot (4), and Complete Application Determination (8). Item 2, the Permit Processing Management Plan, would contain guidance on interpretations that would bring some consistency to the Section 404 Program.

As of this Hearing, we still do not have an APA rule that defines clear and concise policies with regard to isolated waterbodies or for that matter any of the other jurisdictional issues that I have raised above. The Corps and EPA simply make promises and then procrastinate with the hope that no one will ever call them to task. The best we have to date is an "*Advanced Notice of Proposed Rulemaking*" published in the Federal Register on January 15, 2003. We have already had at least two advanced notices – one in 1990 and one in 1998. Now the agencies are hoping that they can again procrastinate and not actually go forward with rulemaking.

In the May 29, 1998 joint memorandum, the Corps and EPA also wrote:

> Although Tabb Lakes, Ltd. v. United States, (715 F. Supp. 726, aff'd without opinion, 885 F.2d 866 (4th Cir., 1989)), concluded that EPA/Corps guidance could not be cited as the legal basis for interstate commerce nexus using migratory birds because that guidance had been issued without notice and comment, the decision did not prohibit the use of migratory birds to establish a connection to interstate commerce under the Clean Water Act. Consequently, notwithstanding the Fourth Circuit's decision in Tabb Lakes, Corps and EPA field offices should continue to assert CWA jurisdiction over all isolated, intrastate water bodies that serve as habitat for migratory birds.

The agencies were put on notice as early as in 1989 that the use of migratory birds as a test for interstate commerce was illegal. They chose to ignore it. While the SWANCC decision has eliminated the future use of the "migratory bird rule," to my knowledge no one has addressed the millions of dollars that the public spent during the period from 1984 to 2001 when it was implemented, and the Corps illegally regulated isolated, intrastate, non navigable waterbodies. Moneys spent to work though the complex permit process. Moneys lost because of time delays in projects. Money spent to defend against alleged violations. Moneys spent for mitigation, restoration and as penalties. How many people were incarcerated because of violation of the CWA jurisdiction based upon the "migratory bird rule?" All of which occurred as the result of an uncodified "rule" instituted by the EPA, ignoring the APA and with the power to compel the Corps to adopt it. The agencies have run rough-shod over the public with no real accountability.

Conclusions

The Corps and EPA, indeed the entire body of federal water-resource agencies, for years has been telling the public what wetlands and waterways are, why they are important and why they must be regulated and protected by the federal government. Yet there is a duplicity in what the public is being led to believe are the landscape features for which ever-increasing, millions of dollars in tax revenues and private funds are expended each year to regulate.

Slides 1-5 and 9-10 in the attached presentation convey the images that the agencies portray to the public as regulated wetlands: lush and often exotic vegetation, plenty of water and colorful

waterfowl, wading birds and wildlife. How could anyone but the most callous despoiler of the environment not agree that protection and regulation is important. Yet, few of such landscape features, are impacted anymore. The regulated public has recognized their value and generally, except for occasional transportation crossings, avoids impacting them.

The battles today between landowners and the federal government generally are waged over the type of landscape features depicted in slides 6-8, 11-17, 20 and 21. They are the roadside ditches, the stormwater ditches, the drainage ditches and irrigation ditches excavated in dry land. They are the borrow pits, the stormwater management ponds, the sewage treatment lagoons and animal feed lot waste holding ponds that are no longer actively used for the original purpose for which they were constructed. They are natural landscapes that may have near-surface ground water during the winter until leaf-buds open and then the plants rapidly dewater the landscape early in the spring and for the rest of the year. They are the meadows and woods where the water table need only reach to within 12 inches of the surface for as little as 7 days every other year, i.e., 7 out of 730 days.

Section 101(b) of the CWA states in pertinent part:

> It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce and eliminate pollution, to plan the development and use (including restoration, preservation and enhancement) of land and water resources…

It is my experience, that many individuals in EPA and the Corps, see Section 404 as the best game in town when it comes to side-stepping the rights of the states as specified in our Constitution and implementing land management decisions by the federal government. The 404 Program as currently implemented is in many cases abusive to the public and decisions rendered are often arbitrary and capricious. Because the jurisdictional limits of the 404 Program are so poorly defined, there are as many different concepts of what constitutes waters of the United States as there are regulators.

Probably the single most important reason, that confusion and inconsistencies exist in the Section 404 Program is the fact, that there are two Executive agencies attempting to implement it. Each has its own views and perspectives. Each has a view of the correct role of the federal government in what, Constitutionally, should be the primary responsibility of the respective states.

While the Corps is supposed to implement the permit program, since 1979, when Attorney General Civiletti determined that EPA has the ultimate authority to determine what is jurisdictional under all Sections of the CWA including Section 404, there have been major disagreements, often very acrimonious, between the staff of the two agencies. It is quite possible that the full extent of the animosity that has existed is not even known to the representatives of the agencies that are testifying at this hearing.

The public has suffered with inconsistent and often arbitrary and capricious decisions that have had dramatic effects on their lives and the use of their private property because the lead agencies, the Corps and EPA, have differing perspectives as do the review agencies, FWS and NMFS. To compound the inconsistencies, the Corps boasts that its decentralized management style is a benefit to the public. What it fails to recognize is that there is a vast difference between decentralized and inconsistent management.

It is inconsistent management that pervades the 404 Program and plagues the Nation. A year ago, a colleague of mine and I decided that there was a need to provide a training course on the limits of Corps jurisdiction. We saw that this was especially needed in the dryland West. Despite the fact that we are both highly versed in Corps regulatory policy, we came to the conclusion that we could not offer such a course because there was no consistent policy being implemented. What the public is told by the Corps in one part of the Nation is not necessarily what can be found in its regulations or what it is likely to be told in another.

It is crucial that all of the terms, which the Corps uses to specify the limits of its jurisdiction, be accurately and unambiguously defined. They must be promulgated, to the extent that the limits specified are consistent with the CWA and the Constitution, through the formal procedures developed for implementation of the Administrative Procedures Act (APA). Many of the Corps definitions related to jurisdiction have not been promulgated through the APA process.

The most fundamental technical issue that must be addressed through rulemaking in light of SWANCC is what is the necessary frequency, duration and relation to the land surface of water to constitute a "navigable water" consistent with the language of Section 404 of the CWA. It is the same issue that has needed to be addressed for decades. This issue applies to how far from traditionally navigable waters, natural streams should be regulate, which and how far distant drainage and irrigation ditches should be regulated and what areas should be called wetland navigable waters.

The longitudinal limit of Corps jurisdiction under Section 404 must be defined in relation to the effect that the discharge of dredged or fill material may have on interstate and/or foreign, commercial navigation in traditionally navigable waters.

Other definitions need to be addressed as well. The "neighboring" part of the definition of the term "adjacent" must be redefined to specify that it includes those morphologically disconnected wetlands that receive surface flow **from** a jurisdictional tributary (what ever that is) on a predictably, frequent basis. Today, districts of the Corps, might determine that wetlands miles from a stream in the 100-year floodplain are adjacent. Others have found that 200 – 3500 feet defines the limit. Each regulator seems to make it up on the fly.

For a wetland to be deemed "adjacent" and, thus, jurisdictional under Section 404, the wetland should be dependent for its existence, at least in part, upon water received from the tributary. Thus, the predictably regular inundation from the tributary should have a recurrence frequency of no less than every two years, and perhaps more in keeping with court rulings on OHWM, it should be at less than a 1-year recurrence frequency, i.e., ordinarily occur.

Water movement by sheet flow or as ground water **TO** a jurisdictional tributary should **NOT** be determinant. Water on virtually all landscapes moves towards stream channels either as overland flow or as ground-water discharge. There is no scientific or legal basis to separate-out morphologically disconnected wetlands from the rest of the nonwetland landscape and regulate them. It has been a long-standing failing of the 404 Program by its fixated emphasis on wetlands, to suggest that they are inherently more valuable or have greater function than the nonwetland landscape. By so doing, many acres of nonwetlands have been destroyed that have had higher overall ecological function and more value to society than the wetlands that were avoided.

There is no definition of the term "tributary" within the context of Section 404, this despite its central role in the definition of "waters of the United States." It must be defined and its upper limits determined by factoring frequency and duration of flow and distance to a traditionally navigable water, such that there can be a demonstrated effect on navigation from a discharge of dredged or fill material. Not by the mere presence of an OHWM. The public should not have to rely upon discussions of the limits of jurisdiction found only in uncodified preambles to Corps regulations to determine what is and is not a water of the U.S. For almost two decades the public was subjected to the uncodified agency whim concerning migratory birds until the Supreme Court struck it down. The Corps and EPA Memorandum of Agreement on mitigation, contains similarly illegal concepts that have not been promulgated in accordance with the Administrative Procedures Act (APA). Mandatory compensatory mitigation is now spoken of as a codified rule (much as the migratory bird rule was) as opposed to a concept without basis in the CFR.

The terms "perennial", "intermittent" and "ephemeral" are defined in the Corps Nationwide Permit Notice from 2000, but are not codified. All definitions related to jurisdiction must be defined and/or redefined through application of the Administrative Procedures Act and codified, not simply instated through a permit notice. The Corps should redefine these terms so that they can be determined using flow data. The USGS has standard definitions of each that have been in place since 1923 (Meizner, O.E. 1923). These should be adopted.

The term"isolated" is defined in the Corps Nationwide Permit Notice from 2000 but not codified. All definitions related to jurisdiction must be defined and/or redefined through application of the APA and codified, not simply instated through a permit notice. As currently defined, isolated is simply the absence of direct connection or the absence of adjacency. If the Corps would produce an adequate definition of the limits of its jurisdiction under Section 404, then there would be no need for any definition of the term isolated.

Many of the landscape features that the federal government regulates today do not meet the definition of wetlands promoted by the National Research Council (1995) in *Wetlands: Characteristics and Boundaries,* and in fact, do not meet an honest reading of the 1987 Wetland Delineation Manual (Environmental Laboratory 1987). My reading of the NRC report is that it would not classify as wetlands most areas where the water table infrequently or never reaches closer to the surface than 12 inches for 7 days during the spring.

As for "tributaries," cases across the country reveal that every roadside ditch, culvert and storm sewer is likely as not to be called tributary. The Corps should not regulate any constructed ditches that are excavated in upland landscapes, nor should it regulate storm drains, sewers, pipes, agricultural drain tiles, gutters and other artificial conveyances, whether they potentially carry water to a traditionally navigable water or not. Ditches and other such conveyances are point sources and any pollutant arising from them that reaches a traditionally navigable waterbody should be regulated under the NPDES program. The Corps jurisdiction under Section 404 is limited. The Corps recognized this in 1974 and Chief Justice reaffirmed it in the SWANCC decision.

In a recent addition to the Corps Headquarters' Regulatory Branch Web site entitled Information on West Nile Virus, the discusses the question *Should wetlands be drained to control mosquitoes?* The Corps answer was:

> Because the Culex mosquito can breed in very small amounts of water, eliminating temporary standing water in plastic containers, discarded tires, or other water-holding containers around one's property can greatly reduce breeding areas. Any stagnant water in rain barrels, irrigation ditches, clogged gutters, backyard home septic systems, and road-side ditches can serve as breeding sites. The difference between these water-holding places and wetlands is the presence of mosquito-eating predators. Wetlands are home to a host of mosquito-eating beetles, backswimmers, water striders, dragonfly larvae, etc. making them significantly less ideal breeding sites for Culex mosquitoes.

Thus, on the one hand the Corps defends natural wetlands by condemning ditches, etc., while across the Nation, ditch after roadside ditch is being identified as wetlands and other navigable waters under Section 404 and gives the regulatory protection afforded natural waterbodies through the requirements to obtain permits to fill them and to compensate for their loss.

There are many thousands of miles of conveyance that transport sediments into natural waters including traditionally navigable waters, that the Corps chooses not to regulate. They do not regulate all roadside ditches - only selective ones. The do not regulate all culverts and piped conveyances - only selective ones. This emphasizes the point that water pollution cannot be prevented by simply calling some channeled conveyances "waters of the U.S." as has been the trend in the last several years. Which channels are regulated and which are not, generally are not based upon technically defensible criteria, but more often upon the personal aesthetic of the individual regulator.

The fact that so many administrative appeals result in a decision that districts did not adequately document their position supports our contention that "it's jurisdictional because I say it's jurisdictional" is frequently used by Corps regulators. The fact that in many cases, after an appeal is found to have merit, districts simply bolster their records and make the same decision again points to the ineffectiveness of the appeal process itself. The rules governing appeals eviscerate the role of Review Officer (RO). In many of the Administrative Appeal (AA) decisions, the RO appeared to make reasonable and fair decisions. However, as written, the rules allow the districts to amend case files and in many instances retain the same dubious jurisdictional determinations.

With regards to technical points of jurisdiction, too often the RO indicates that the rules do not allow for the RO to independently make judgement decisions. In such cases, it would be more appropriate for the RO to seek technical advice from an "independent" third party [the logical choice is the Environmental Laboratory staff in Vicksburg, Mississippi through the Wetland Research Assistance Program (WRAP) [although the independence might be questioned] rather than simply giving deference to the districts opinion.

In the final analysis, Congress must dictate that an APA rulemaking proceed promtly and encompass the full breadth of jurisdictional issues that exist. Congress must follow-up on the agencies' performances. The Corps and EPA must not be allowed to slide for another decade without clarifying the limits of federal jurisdiction. Furthermore, Congress would serve the needs of the public if it would state clearly and concisely in the law, the maximum extent of jurisdiction through amendment of the Clean Water Act.

Literature Cited

Dunne, T. and L. B. Leopold, 1978. Water in environmental planning. W. H. Freeman and Company: New York, pp. 1-818.

Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Heath, R. C. 1983. Basic ground-water hydrology. U.S. Geological Survey, Water-Supply Paper 2220, Washington, DC. 84 p.

Leopold, Luna B. 1994 A View of the River. Harvard Univ. Press, Cambridge, MA, 298 pp.

Meizner, O.E. 1923. Outline of ground-water hydrology, with definitions. USGS. Water-Supply Paper 494, 71 p.

National Research Council. 1995. Wetlands: characteristics and boundaries. William M. Lewis, Jr., chair., Committee on Characterization of Wetlands. National Academy Press. Washington, D.C.

Studt, J. 1997. NRCS field indicators of hydric soils. Directorate of Civil Works, Army Corps of Engineers. Washington, D.C.

Williams, A. E. 1992. Clarification and interpretation of the 1987 Manual. Directorate of Civil Works, Army Corps of Engineers. Washington, D.C.

Winter, T.C., J.W. Harvey, O.L. Franke and W.M. Alley. 1999. Ground water and surface water a single resource. USGS Circ. 1139. Denver, CO. 79 p.