the Wire

SWCA

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Cover story:

MONSTER PATROL

BACK TO THE FUTURE | 2
AN ALTERED LANDSCAPE | 7
SIMPLY SPEAKING | 10
UNDER THREAT | 12

EDITOR'S NOTE: On Aug. 27, 2015, Chief Judge Ralph R. Erickson of the U.S. District Court for the District of North Dakota issued a stay on the Clean Water Rule's implementation in Colorado, North Dakota, Alaska, Arizona, Arkansas, Idaho, Missouri, Montana, Nebraska, Nevada, South Dakota, Wyoming, and New Mexico. The judge's stay only applies to these states. The rule went into effect for all other states on Aug. 28, 2015.

BACK TO THE FUTURE:

TURNING BACK THE CLOCK ON CLEAN WATER ACT JURISDICTION

By Matt Stahman

In the late 1980s, life was simple: DeLoreans, parachute pants, Michael J. Fox in theaters. Life under the Clean Water Act was simple as well. Nationwide Permit 26 was still active, allowing up to five acres of impact to certain types of waters. Wetland delineations only required one manual, written in 1987. And any natural channel that had an ordinary high water mark (OHWM) or wetland that met the manual's three criteria was subject to U.S. Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) jurisdiction based on the definition of "waters of the U.S." (WOTUS) written in 1986.

Over the last three decades, a lot has changed. We've seen multiple Supreme Court cases (Bayside, SWANCC, and Rapanos) dealing with the limits of USACE and EPA jurisdiction under the Clean Water Act. These cases and subsequent agency guidance muddied the waters, so to speak. Some waters and wetlands were "in" and some were "out," with substantial confusion as to which was which.

On May 27, 2015, the agencies attempted to remove the confusion by issuing a new definition of WOTUS. This definition could, in many parts of the country, take us back in time relative to USACE and EPA jurisdiction under the Clean Water Act.

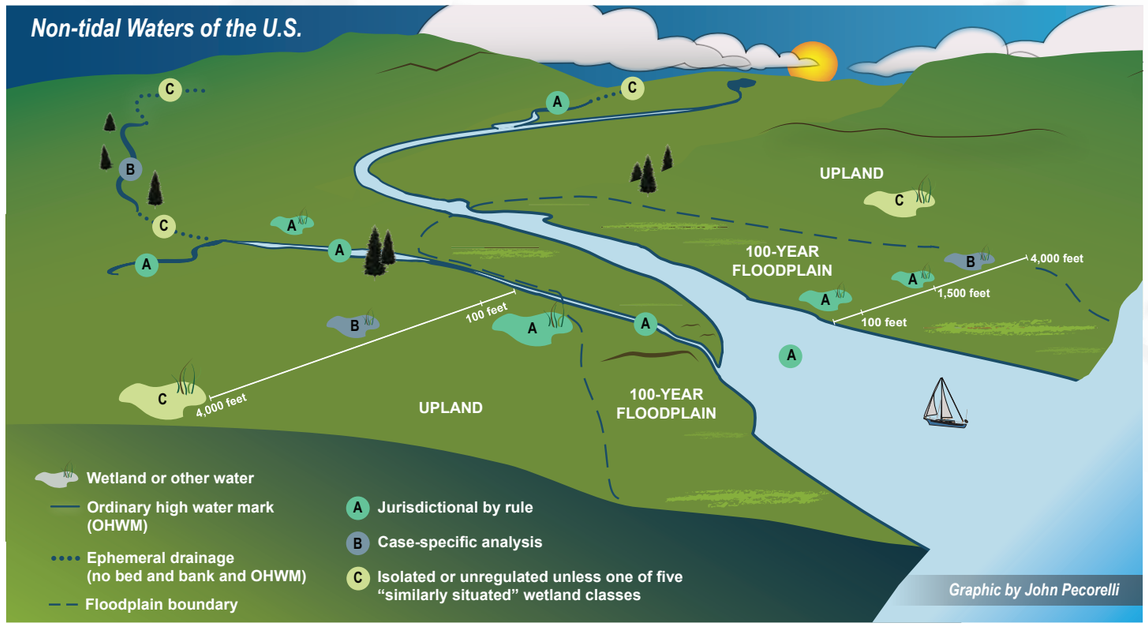
THE NEW DEFINITION IN A NUTSHELL

Paragraph "a" defines the eight categories of WOTUS:

1. traditional navigable waters
2. interstate waters
3. territorial seas
4. impoundments (of 1 - 3 above and 5 below)
5. tributaries
6. adjacent waters
7. five special groups of similarly situated waters
8. case-specific significant nexus waters

These are referred to as "a(#)" waters by the agencies. For the most part, the categories covered in paragraphs a(1) through a(5) are familiar ground. Traditional navigable waters, interstate waters, and territorial seas have always been considered jurisdictional, as have impoundments of those waters and tributaries with an OHWM. Little has changed except the clarification that a tributary must have an OHWM and a "bed and banks."

Adjacent waters, or a(6), morphed from the 1986 version limited to only adjacent wetlands to include other waters such as ponds, lakes, oxbows, impoundments, and similar waters. Adjacency is defined in the rule as "bordering, contiguous, or neighboring" an a(1) through a(5) water. Generally, these include waters at least partially within 100 feet of an OHWM, or within 1,500 feet of an OHWM and within the FEMA 100-year floodplain.



FROM HERE IT GETS TRICKY

The last two categories are based on the agencies' interpretation of the significant nexus standard presented in the Supreme Court cases: waters are WOTUS "if they, either alone or in combination with *similarly situated* waters in a region, *significantly affect* the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, or the territorial seas" (Clean Water Rule: Definition of WOTUS, USACE & EPA, May 27, 2015, emphasis added). Note the key words *similarly situated* and *significantly affect*. A water can have a significant nexus if it significantly contributes just one of nine different functions — sediment trapping, nutrient recycling, pollutant filtering, floodwater retention, runoff storage, flow contribution, organic matter export, food resources export, and aquatic species habitat — to the integrity of a downstream jurisdictional water.

Paragraph a(7) waters include five special groups determined to be similarly situated:

- prairie potholes (in the upper Midwest)
- Carolina/Delmarva bays (along the Atlantic coast)
- pocosins (in the central Atlantic coast)
- western vernal pools (in California)
- Texas coastal prairie wetlands (along the Texas Gulf Coast)

All of these are typically discrete, freshwater, depressional wetlands scattered across their respective landscapes. Many had been considered isolated and non-jurisdictional after the 2001 SWANCC Supreme Court case. These waters will be considered jurisdictional on a case-specific basis if all such waters in a single watershed meet the significant nexus standard, which is not likely to be difficult.

Last but not least, there are the a(8) waters. This is sort of a catchall category for any waters left out above that might meet the significant nexus standard. There are "bright line" limits, however. These waters have to fall within the 100-year floodplain, or within 4,000 feet of the OHWM or high tide line.

In many areas of the country, especially east of the Rocky Mountains, the 4,000-foot limit will include vast areas. One exercise we ran using GIS showed 99% of the area west of Houston could fall within 4,000 feet of a tributary with a potential OHWM and bed and banks. Wetlands and other waters within this area, even if considered isolated and non-jurisdictional before, could be considered jurisdictional on a case-specific basis.

The figure opposite illustrates those non-tidal waters considered to be jurisdictional by rule, those requiring case-specific analysis, and those that are isolated or unregulated.

SO WHAT'S NOT INCLUDED?

A second paragraph in the new rule defines what are not considered WOTUS. These include waste treatment systems, prior converted cropland, artificially irrigated areas, stock ponds, manmade lakes, rice fields, stormwater control features, wastewater recycling structures, swimming pools and ornamental waters constructed in dry land, water-filled depressions associated with mining or construction (including borrow pits), erosional features that are not tributaries, groundwater, and (my personal favorite) puddles.

But what about ditches? It turns out not all ditches are alike in the eyes of the agencies. The new definition excludes ditches that don't flow most of the time (perennial), so long as they are not relocating a natural tributary or draining wetlands. Ditches that do not flow into a WOTUS are also not jurisdictional. However, ditches with relatively permanent flow, or those that drain a wetland or relocate a stream, are still potentially jurisdictional.

A third paragraph of the new rule defines seven key terms: adjacent, neighboring, tributary, wetland, significant nexus, OHWM, and high tide line. For the most part, these definitions are identical or very similar to their predecessors, with the exception of the linear footage limits given above. The most notable exception is "tributary," which is now defined by the presence of a bed and banks and an OHWM.

So it's back to the future for Clean Water Act jurisdiction. In some parts of the country, jurisdiction will for all practical purposes look very similar to pre-SWANCC days when any water that fit the definition of a tributary or a wetland required a permit.

Time to find my parachute pants and jump in the DeLorean. ■

For more information on Clean Water Act jurisdiction, contact **Matt Stahman** at **mstahman@swca.com**.

IMPLICATIONS OF THE NEW CLEAN WATER ACT RULES

- Expanded Clean Water Act jurisdiction in parts of the country, especially where the five special groups of similarly situated waters occur
- Greater scrutiny of potential jurisdiction for ditches
- Increased permitting requirements under Clean Water Act Section 404 and Section 402 National Pollutant Discharge Elimination System stormwater discharge permits
- A likely increase in the USACE and EPA permit backlog affecting permittees' project schedules and increasing project costs associated with permitting and mitigation

MONSTER PATROL:
INVASIVE SPECIES REMOVAL IN THE EDWARDS AQUIFER SYSTEM

By Eric Munscher

In the last edition of The Wire*, we featured a story on stormwater sampling that SWCA scientists have been conducting in the Edwards Aquifer of Central Texas. Here, in part two of our series, we delve into another aspect of our work related to implementation of the Edwards Aquifer Habitat Conservation Plan (EAHCP), invasive species removal.*

In a scene from the 1986 James Cameron film, *Aliens*, a discussion between the lead character, Ripley, and six-year-old Newt unfolds about monsters:

> **Newt:** My mommy always said there were no monsters — no real ones — but there are.
>
> **Ripley:** Yes, there are, aren't there?
>
> **Newt:** Why do they tell little kids that?
>
> **Ripley:** Most of the time it's true.

Yes, monsters do exist, and in the environmental realm they take the form of invasive species. These monsters are largely a product of human interference in an ecosystem — whether by introducing a non-native species accidentally or on purpose, or by altering habitat in such a way that a native species becomes invasive and disturbs the natural ecosystem balance. Invasive species that do not evolve in an ecosystem over time often undergo population "release" with the possibility for unlimited and uncontrollable breeding potential. With no natural predators to keep their numbers in check, invasive species often have a competitive advantage over native species and cause those native species to suffer severe population declines.

This is particularly troubling for endangered species. The U.S. Fish and Wildlife Service has estimated that more than 400 of the 1,300 species currently protected by the Endangered Species Act — and an additional 180 species that are candidates for listing — are impacted in some manner by invasive species.

Invasive species have far-reaching economic consequences as well. The damage they cause — and the management required to repair that damage and stem the tide of invasive species — places an enormous financial burden on city, state, and federal government budgets. A 2012 U.S. Fish and Wildlife Service fact sheet estimated spending of $100 million by the U.S. Department of the Interior just in 2011 on preventing, detecting, managing, and controlling invasive species, as well as on research, outreach, and habitat restoration. That's truly a monstrous sum.

> ***"Invasive species compete with native species and disturb the natural ecosystem balance."***

MONSTERS IN THE EDWARDS AQUIFER SYSTEM

The EAHCP was created in 2012 to mitigate and minimize the effects of activities in the Edwards Aquifer on eight species listed as federally threatened or endangered. The EAHCP set forth a series of ecosystem restoration and management projects in the cities of New Braunfels (where Comal Springs is located) and San Marcos (where San Marcos Springs is located) to protect local endangered species.

One key project, invasive species removal and monitoring, targets non-native species including the vermiculated sailfin catfish, blue tilapia, nutria, and giant ramshorn snail for removal from the Comal Springs ecosystem (Landa Lake). These non-native species are thought to compete for habitat and food with native threatened and endangered species. Additionally, since nutria and sailfin catfish burrow into the sides of river and lake banks when they nest — causing the destabilization of soil, erosion, and an increase in sediments in the waterways — these species are responsible for a substantial amount of the damage observed along Landa Lake's embankments. Tilapia also dig into subsoil to build their nests, in the process destroying vegetation that is needed by native species for food and cover.

Since 2013, biologists from SWCA's Houston, San Antonio, and Pittsburgh offices have performed this invasive species removal for the city of New Braunfels. We remove the invasive fish species using an array of techniques specifically targeting the fish as they conduct certain activities. Gill nets target fish such as tilapia that school in open water, while fyke nets create a barrier to trap fish in a breeding or feeding ground. Trained biologists also use modified hand spears called Hawaiian slings to remove both fish species. We capture nutria by baiting Havahart® traps with fragrant fruits and vegetables such as apples and carrots. Invasive snail removal has largely been restricted to laborious hand capture.

THE RESULTS SO FAR

During the first year of the project in 2013, biologists removed 6,010 pounds of overall biomass from Landa Lake, with another 3,823 pounds removed in 2014.

The decline in numbers from year one to year two — most strikingly, a reduction of nutria from 40 individuals in 2013 to 10 in 2014 — strongly suggests that the removal program has successfully affected the breeding population in the area. Considering that only two nutria removed in 2014 were female, current populations have likely declined below the level necessary to sustain a breeding population. At press time, subsequent trapping during the 2015 removal effort will verify these results. Long-term monitoring and ongoing management will be critical to deterring new individuals from neighboring regions from re-establishing a breeding population and damaging the landscape again.

Similarly, SWCA biologists removed tilapia and sailfin catfish in falling numbers from year one to year two. Successful invasive species removal projects that target fish over a long period of

continued on page 6

continued from page 5

time also strive to see decreases in overall length and weight of individuals, which would indicate that the population is losing adult (breeding) individuals and fewer fish are reaching adult size over time. Happily, our efforts have already shown such results. These trends combined lead to the conclusion that with continued removal efforts, the populations may hit a point at which breeding potential fails.

To date, SWCA has removed more than five tons of invasive biomass from Landa Lake. That's a lot of removed monsters. Of course, such removal often requires drastic measures and many years to accomplish.

In James Cameron's *Aliens*, the ultimate recourse was to blow up the entire area where the monsters resided. Oftentimes invasive species populations get so out of control that an attractive option might be destroying the ecosystem and starting over. However, such an option is not available in Landa Lake, which New Braunfels manages under guidance from the EAHCP to protect the endangered species in the springs.

Fortunately, Landa Lake is a closed system with no direct overland flow into the lake, making it very difficult for invasive species to recolonize unless facilitated by humans. That makes our job easier. Once we have eradicated — or at least pushed the breeding populations to a low enough level for them to die out — the monsters are likely to be gone for good. ■

For more information on Edwards Aquifer invasive species removal, contact **Eric Munscher** at **emunscher@swca.com**.

SWCA crews trap invasive fish in Landa Lake using fyke nets.

Captured invasive fish are boated to shore for removal from Landa Lake.

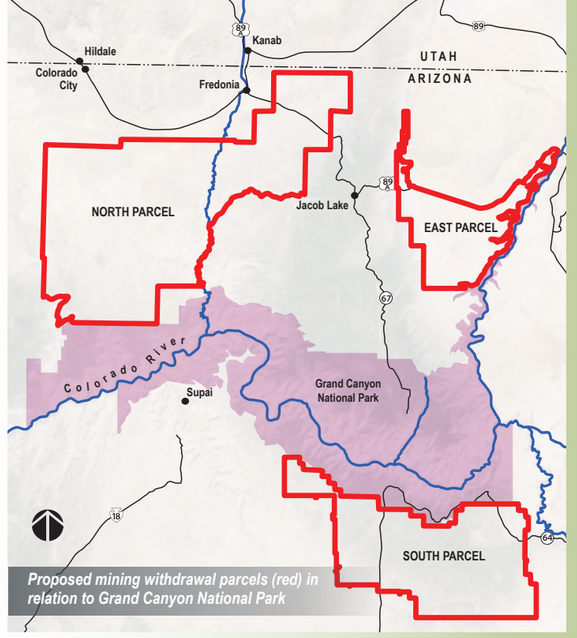
This chart shows the invasive species currently being removed in the Edwards Aquifer system and the native species they harm.

INVASIVE SPECIES	DAMAGING BEHAVIORS	FOUNTAIN DARTER	COMAL SPRINGS DRYOPID BEETLE	COMAL SPRINGS RIFFLE BEETLE	COMAL SPRINGS SALAMANDER	SAN MARCOS GAMBUSIA	TEXAS WILD RICE	OTHER NATIVE AQUATIC SPECIES
BLUE TILAPIA **Scientific name:** *Oreochromis aureus* **Place of origin:** Northwest Africa	Destroys native plants	◉		◉	◉	◉	◉	◉
	Host for parasites	◉						◉
	Out-competes native species	◉						◉
	Nesting activities cause erosion							◉
VERMICULATED SAILFIN CATFISH **Scientific name:** *Pterygoplichthys disjunctivus* **Place of origin:** South America	Eats native species eggs	◉	◉	◉	◉	◉		◉
	Host for parasites							◉
	Out-competes native species							◉
	Burrowing activities cause erosion	◉	◉	◉	◉	◉	◉	◉
NUTRIA **Scientific name:** *Myocastor coypus* **Place of origin:** South America	Destroys native plants	◉	◉	◉	◉	◉	◉	◉
	Burrowing activities cause erosion	◉	◉	◉	◉	◉	◉	◉
GIANT RAMSHORN SNAIL **Scientific name:** *Marisa cornuarietis* **Place of origin:** Central / South America	Destroys native plants	◉				◉	◉	◉
	Host for parasites	◉				◉		◉

AN ALTERED LANDSCAPE:
EVALUATING URANIUM MINING IN NORTHERN ARIZONA

by Charles Coyle

This article is the first installment in a two-part series on a high-profile SWCA project that resulted from a decision by the Secretary of the Interior to impose a 20-year "withdrawal," or halt, on new mineral exploration and mining in northern Arizona in the vicinity of the Grand Canyon. Part one explores the circumstances leading up to this federal action and how uranium prompted such an initiative.



Proposed mining withdrawal parcels (red) in relation to Grand Canyon National Park

As anyone who has filled up the gas tank or purchased home heating oil in the past few years knows, fluctuations in energy costs — and, occasionally, wild price swings up or down — are not uncommon. The numerous factors that contribute to this volatility in the energy sector are hard to pin down. It may be a rise or fall in oil demand in China or India, a sudden flare-up in hostilities in the Middle East, a change in U.S. domestic energy policy, or a new government in Venezuela or Nigeria or elsewhere. Perhaps the single most important factor, however, is the way the skittish commodities markets around the world react to such events.

URANIUM AS AN ENERGY SOURCE

The role that uranium plays as an energy source on the world stage is no different. Due to a real or perceived increase in global demand for uranium as fuel for nuclear reactors, medical devices, and other uses, uranium prices skyrocketed from approximately $20 per pound in late 2006 to more than $130 per pound by late 2007.

This surge in market prices resulted in a massive increase in filings of new mining claims on public lands in the western United States, particularly in northern Arizona, and particularly on public lands in the vicinity of the Grand Canyon administered by the Bureau of Land Management (BLM) and the U.S. Forest Service. Mining claims in these areas, which had numbered in the low hundreds prior to the unforeseen surge in uranium prices, suddenly swelled into the thousands. In fact, as many as 5,000 new uranium mining claims on public lands in northern Arizona were filed in 2008-2009. Needless to say, these developments in such proximity to the Grand Canyon — arguably the premier gem of America's national park system — alarmed both environmental organizations and federal land managers.

NORTH AMERICA'S RICHEST URANIUM DEPOSITS

The geology in and around the Grand Canyon is extraordinarily complex. Alternating layers of permeable and impermeable rock, of shales, sandstones, and limestones, have been shaped by the geological subsidence and uplift events and fracturing and folding that has occurred over eons. But beyond these forces, the geology of this unique area has been sculpted by water. The percolation and movement of water over time is the very reason the Grand Canyon exists.

The percolation of water into these particular geological structures is also the reason prospective uranium miners rushed to

continued on page 8

Downstream of the Grand Canyon, the Colorado River provides water to people in California, Arizona, Nevada, and Mexico.

continued from page 7

> ***The most common concern is the potential release of radioactive contamination into the aquifer.***

file mining claims on the public lands surrounding the Grand Canyon. One of the unique geological characteristics of the area is the presence of so-called "breccia pipe" formations, which are cylindrical columns of collapsed, broken rock and substrate (see graphic at right). Such "pipes" are not especially common — there may only be a few hundred present within the entire region of the Grand Canyon — and the columns are not particularly large.

But over many hundreds of thousands of years, the breccia acted as a kind of filtering mechanism through which water-borne uranium molecules were precipitated out, captured and concentrated in the breccia matrix, and in some cases developed into extraordinarily rich deposits of uranium ore. Numerous experts in the field consider the northern Arizona deposits quantifiably the richest in North America and, in terms of concentrated yield, on par or exceeding uranium deposits anywhere in the world.

EFFORTS TO LIMIT MINING NEAR THE CANYON

By law, no commercial mining is permitted within Grand Canyon National Park itself. However, the potential for a massive influx of new uranium mining operations in the vicinity of the Grand Canyon alarmed environmental advocacy groups and federal land managers, including those at the highest levels of the National Park Service. Representatives of numerous Indian tribes in the region — including the Supai, Havasupai, Hualapai, Paiute, Navajo, and Hopi, among others — also loudly spoke out in condemnation of what they perceived as a grave and imminent danger to their peoples and sacred lands.

Other specific resource concerns were cited by these disparate parties, including the potential for visual impacts, increased heavy truck traffic, further impairments to regional air quality, loss of recreational opportunities, and potential desecration of Indian sacred sites. However, the most commonly voiced concern was the potential for uranium mining in the breccia pipe structures to release radioactive contamination into underground aquifers, seeps, and springs. This could potentially result in contamination moving downstream into the Colorado River itself, which is a source of agricultural, recreational, and drinking water for upwards of 30 million people in California, Arizona, Nevada, and Mexico.

Thus, it was in this context that Congressman Raúl Grijalva (D-Tucson) introduced the Grand Canyon Watersheds Protection Act in March 2008. The bill proposed to permanently ban new hard-rock mining within an approximately 1-million-acre area of BLM- and Forest Service-administered lands surrounding the Grand Canyon. The Obama administration, which assumed office in January 2009, countered with a somewhat different approach to the situation. Under the Federal Land Policy and Management Act (FLPMA), the Interior Secretary has authority to "withdraw lands from mineral entry" (i.e., to impose a moratorium on any new mining) for up to 20 years.

A government-sponsored study of potential impacts of the 20-year withdrawal option was therefore initiated in the early summer of 2009. Then-Secretary Ken Salazar assigned five major federal agencies — the BLM, U.S. Forest Service, National Park Service, U.S. Geological Survey, and U.S. Fish and Wildlife Service — to conduct an exhaustive environmental impact review of the proposed withdrawal and to issue an Environmental Impact Statement of their findings in compliance with the National Environmental Policy Act (NEPA). The BLM was to be the lead agency overseeing this process.

SWCA'S ROLE IN THE PROJECT

SWCA was selected to assist the BLM and other federal agencies in conducting the required NEPA analysis for this very high-profile and controversial project. We knew from the start that this effort had been designated the highest level of priority by the Department of the Interior. We also knew that the project completion deadline was tightly constrained by the rules set forth in Section 204 of the FLPMA governing segregations and withdrawals. SWCA mobilized a team of NEPA and other environmental professionals from our offices throughout the Southwest. Our federal mining law experts, biologists, botanists, hydrologists, geologists, and archaeologists set to work to assist the BLM and other agency representatives in attending and facilitating public scoping meetings, which were held that autumn of 2009 in Fredonia and Flagstaff, Ariz.

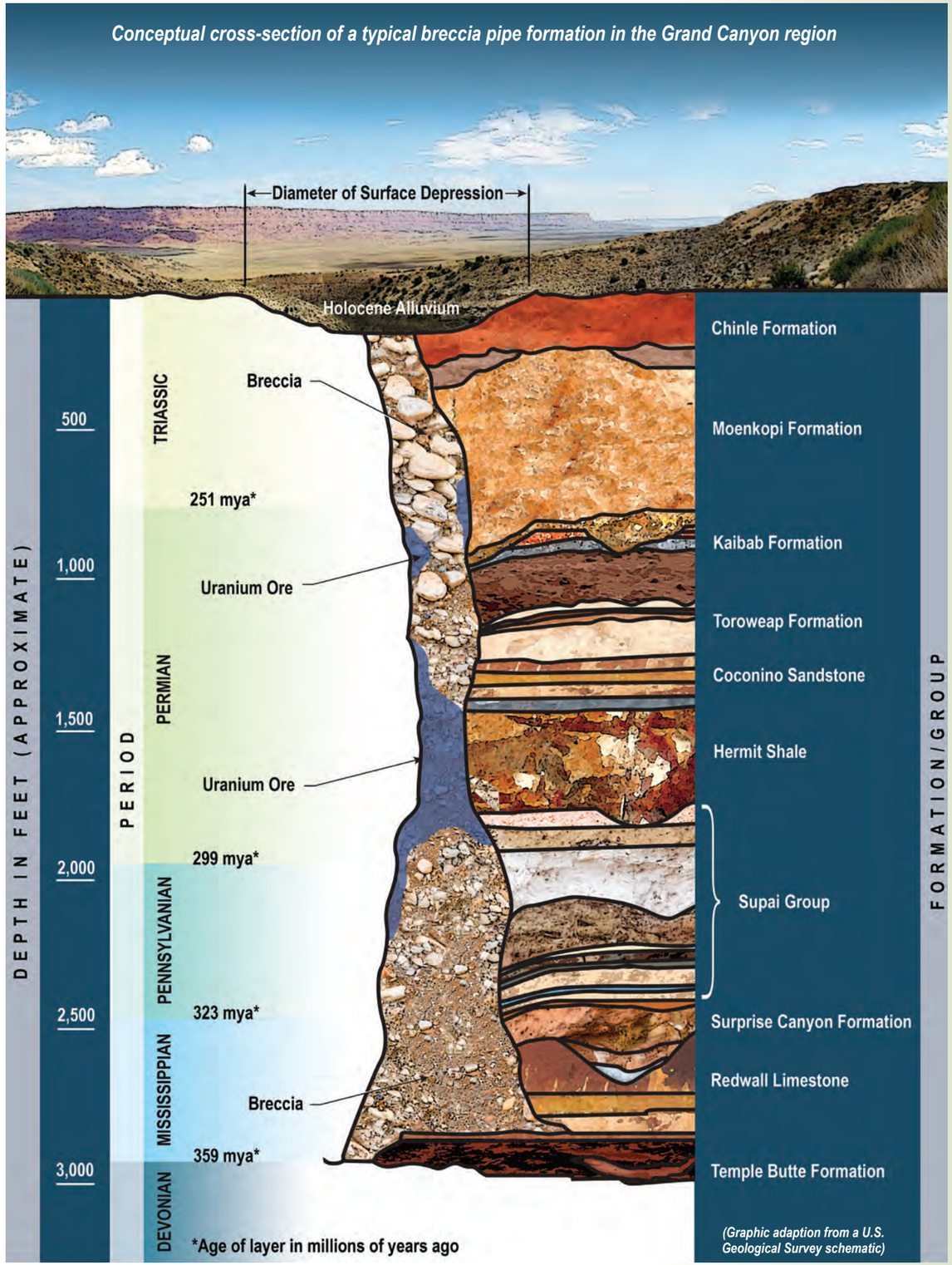
Under NEPA, "scoping" is the process by which the designated lead federal agency actively reaches out to the public and other interested parties — through newsletters, flyers, websites, newspaper legal announcements, public meetings, and other means — to inform them of a significant proposed federal action and solicit input regarding any concerns people may have about the project.

The BLM Northern Arizona Proposed Withdrawal Project was extraordinary in that within weeks this public outreach effort garnered more than 83,000 comment submittals from 92 countries — undoubtedly reflecting the regard many feel for the importance of the Grand Canyon as a heritage resource for the entire world.

In the next edition of *The Wire*, part two will explore the withdrawal project itself and the legal fallout that continues to unfold.■

For more information, contact **Charles Coyle** at **ccoyle@swca.com.**

Conceptual cross-section of a typical breccia pipe formation in the Grand Canyon region



(Graphic adaption from a U.S. Geological Survey schematic)

SIMPLY SPEAKING:
ANGOON AIRPORT EIS TAKES A GRAPHICAL APPROACH

In January 2015, the Federal Aviation Administration (FAA) released the Draft Environmental Impact Statement (EIS) — produced in close coordination with SWCA — for the proposed Angoon Airport in Alaska. The document's use of plain language, easy-to-understand graphics, and a navigable structure has earned praise from EIS readers and reviewers. Wire editor Christiana Ferris spoke with project manager Amanda Childs in SWCA's Portland office and managing editor Kari Chalker in Salt Lake City about the innovative approach the FAA and SWCA took in preparing the EIS with an eye toward better public disclosure.

Wire: Give us some background on the Angoon Airport Project.
Childs: The small community of Angoon in southeast Alaska is currently accessible only by seaplane and ferry. The proposed project is the construction of a new land-based airport. The Alaska Department of Transportation and Public Facilities is the party proposing the project and would maintain and operate the airport if it is built. The FAA is responsible for the safety and environmental requirements of public use airports and is the lead federal agency responsible for the preparation of this EIS. There are three airport locations analyzed in the EIS. Two of them are located in the Kootznoowoo Wilderness and one is on private lands.

Wire: Why did the FAA and SWCA choose a more graphical approach for the Angoon Airport EIS?
Childs: Knowing the audience for this EIS would be broad, ranging from the residents of the remote village of Angoon to scientists and legal experts representing agencies and nongovernmental organizations, the FAA project manager, Leslie Grey, set a goal to prepare a document that members of the general public could readily understand but that would remain scientifically and legally defensible. With the SWCA team on board and a wide range of specialists with a similar goal in mind, the FAA-SWCA team worked together to develop an approach.

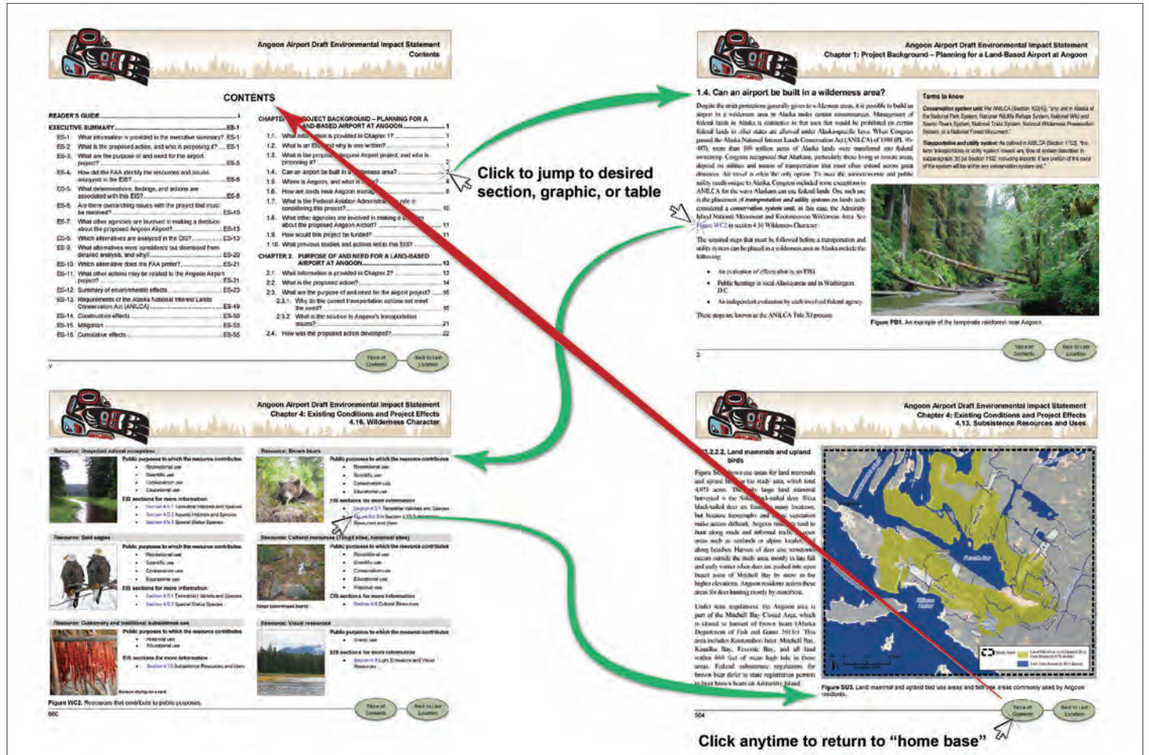
The result is an EIS that is engaging, accessible, and comprehensible, fulfilling the true spirit of public disclosure called for in the National Environmental Policy Act (NEPA). This "plain language" EIS makes the alternatives and the potential effects of those alternatives very clear to a variety of readers.

Wire: How does this EIS do a better job of public disclosure?
Chalker: There's a common notion that EISs should be written for an eighth-grade level. It's an interesting idea — and a good reminder to environmental professionals that EISs are meant for the public and should be as accessible as possible. But some professionals hear the guidance "write to an eighth-grade level" and think that means "dumb it down." That's not true, and it's certainly not the intent of NEPA. We can't fully disclose a project's impacts if the information is dumbed down. However, the Plain Writing Act of 2010 requires that federal agencies use "clear Government communication that the public can understand and use."

Even with the passage of this act, many EISs are more complicated than they need to be. EISs are usually written by teams of scientists who are good at their research but are not necessarily trained as writers. They think and write in the terminology of their discipline — in other words, jargon — and they sometimes assume that everyone understands the same words, concepts, and information that they do.

For the Angoon Airport EIS, a team of writers, editors, graphics specialists, and reviewers (from both the FAA and SWCA) transformed the normal complexity of an EIS using three components:

- plain language
- a navigable structure with hyperlinks that readers can use to easily find the information they need
- easy-to-understand drawings, charts, and maps



In addition to navigable graphics in the electronic version of the Angoon Airport EIS (this page), the document included a host of location maps, illustrations to explain technical terms, and color-coded graphics to help readers visualize key elements such as habitat types (see page 14).

Wire: How does Plain Writing Act compliance come into play?
Chalker: Even the best writers can't always avoid discipline-specific terminology. This is especially true when the NEPA document must discuss legal terms. To help with this issue, the EIS uses "terms to know" text boxes. These boxes provide straightforward definitions of any complex terms in the text. The definitions appear on the same page where the term is first used in a given chapter. The term is shown in a bold, italicized font. In keeping with a plain language theme, definitions are stated in simple terms unless quoted and formally cited.

In terms of navigable structure, the EIS comes in two formats: as a paperback book and as a PDF available on a website or CD. The PDF has hyperlinks for website-style navigation, so readers can move easily from section to section. Readers of the paperback book format have similar flexibility because all hyperlinked information is findable by section number. Either format allows the reader to find key information quickly and easily.

Finally, in terms of graphics, the team's editors, designers, and mapping specialists worked with the scientists to create maps

continued on page 14

> *"The EIS is engaging, accessible, and comprehensible, fulfilling the true spirit of public disclosure."*

UNDER THREAT:
NORTHERN LONG-EARED BATS PRESENT COMPLIANCE CHALLENGES FOR PROJECTS

By Drew Carson, Melanie Gregory, and Christiana Ferris

There's a tiny menace out there, lurking in caves and weaving a path of destruction that has left more than 5.7 million dead since 2006.

The killer? The aptly named *Pseudogymnoascus destructans*, the fungus that causes White-nose Syndrome, or WNS for short.

Its victims? Several bat species in the eastern United States that are increasingly threatened with extinction in the wake of this fatal disease. Once the fungus enters caves or mines where bats hibernate in winter, it can quickly wipe out entire colonies. Since it was first observed in New York in 2006, WNS has spread rapidly and steadily, and it has recently been confirmed as far west as Oklahoma.

THE TOLL ON NORTHERN LONG-EARED BATS

Among the species most hard hit by WNS is the northern long-eared bat (*Myotis septentrionalis*), a small woodland bat ranging from southern Alabama to eastern Montana and over to the Atlantic coast. It also occupies much of southern and central Canada. Hibernating in caves and cave-like structures during the winter, the bat emerges in the spring to migrate to its summer grounds, where maternity colonies roost in trees with peeling bark, cracks or crevices, and cavities, as well as man-made structures including barns and attics. In the fall, they return to their hibernating locales to overwinter.

WNS has taken a severe toll on northern long-eared bat populations in the northern and eastern portions of the species' range. Other species, such as big brown bats (*Eptesicus fuscus*) and gray bats (*Myotis grisescens*), have fared better in the face of WNS, but the precipitous decline of some northern long-eared bat populations prompted the Center for Biological Diversity to petition the U.S. Fish and Wildlife Service (the Service) to list the species as endangered in 2010. In April 2015, the Service published a rule listing the northern long-eared bat as a threatened species under the Endangered Species Act (ESA). The Service determined that the northern long-eared bat is at risk of becoming endangered but is not yet endangered at this time because WNS has not spread throughout the species' entire range, and populations not affected by WNS appear stable.

Along with the listing decision, the Service proposed a "special rule" under section 4(d) of the ESA, which acknowledges that the decline of the species is primarily a result of WNS rather than from habitat loss or other human activity. Under the interim 4(d) rule, incidental take of northern long-eared bats is not prohibited outside of areas that are affected by WNS, which the Service considers to be any location within 150 miles of a county where WNS has been confirmed (see map at right).

Certain specific activities that may result in incidental take within WNS-affected areas — such as forest management practices and maintenance or limited expansion of existing rights-of-way — are also exempted under the interim 4(d) rule, as long as these activities meet certain conditions for avoidance of areas known to be occupied by the species (see sidebar). The Service is reviewing the interim 4(d) rule to determine whether additional classes of activities should be included in those already specified. A public comment period ended July 1, and a final 4(d) rule is anticipated by the end of 2015.

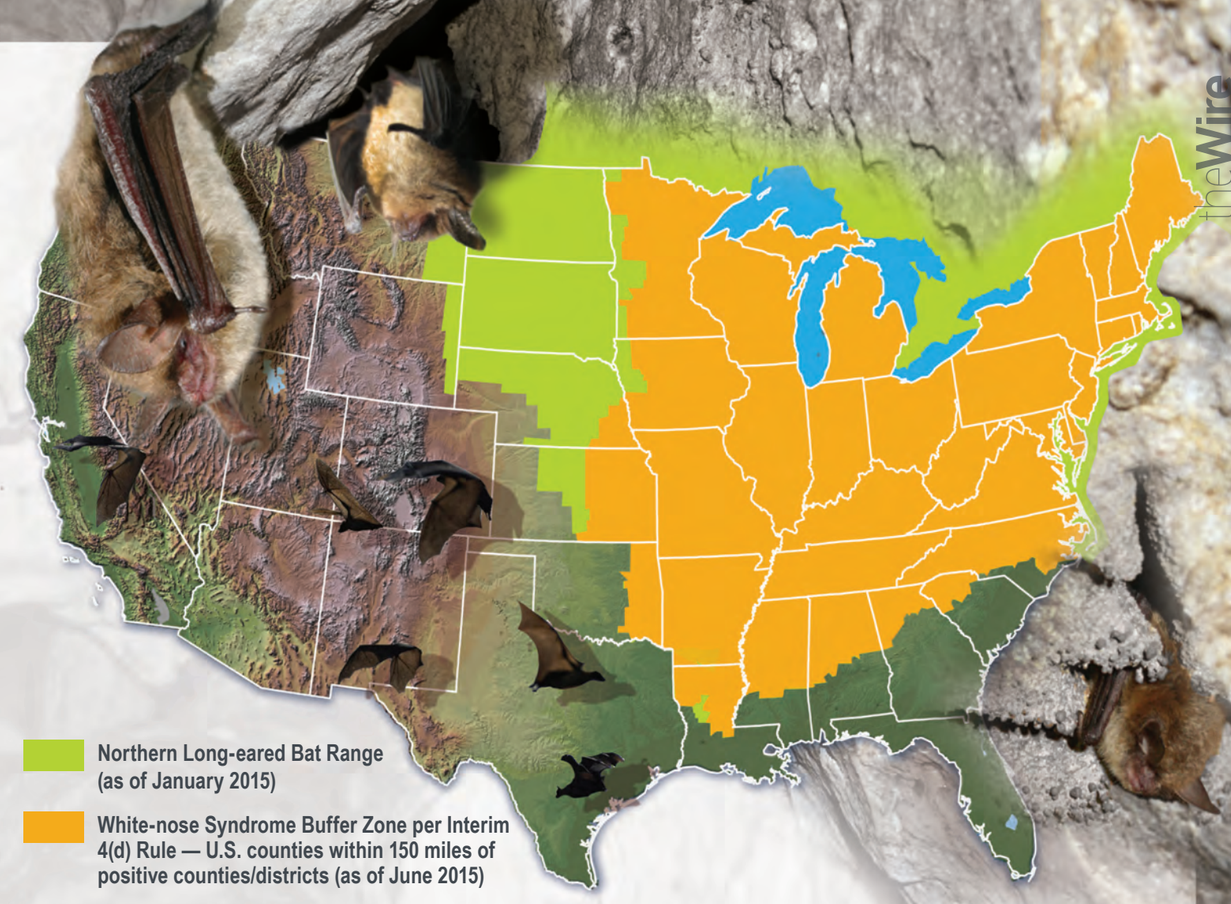
POTENTIAL IMPACT ON PROJECTS

It is the opinion of the Service that projects within the range of the northern long-eared bat that require clearing of forested areas may result in adverse effects to bats, either directly (e.g., if occupied roost trees are cut down) or indirectly (as in the case of negative effects resulting from the removal of habitat). Additionally, some operational projects with ongoing activities, such as wind energy facilities, have the potential to affect northern long-eared bats even if no new tree clearing or other habitat alteration is proposed.

Prior to undertaking any new project within the range of the species (or for existing projects with ongoing activities), project proponents should evaluate their project to see where it fits within the framework of the interim 4(d) rule, and consider the risk their project poses to northern long-eared bats. SWCA can work with developers at all phases of a project to identify solutions ranging from risk assessments to in-depth field surveys and conservation strategies, and we can coordinate with the Service to obtain permit coverage for any incidental take that may occur.

OVERLAP WITH THE INDIANA BAT

Project developers in the Midwest and eastern United States may already be familiar with ESA compliance requirements relative to the Indiana bat (*Myotis sodalis*), an endangered species whose range is similar to that of the northern long-eared bat. The Indiana bat is also a woodland bat that roosts in trees in the summer and hibernates in caves in the winter. Given certain ecological similarities between the two, compliance efforts — including presence/probable absence surveys, effects analyses, conservation measures, etc. — may generally follow similar paths for both species. For example, the Service has approved the use of the 2015 Indiana Bat Rangewide Summer Survey Guidance for documenting the presence or probable absence of northern long-eared bats. There are differences between the two species, and the range of the northern long-eared bat includes many states the Indiana bat does not occupy. Although the geographic overlap of the two species and their ecological similarities allow us to approach ESA compliance for the northern long-eared bat with a roadmap based on a long history with the Indiana bat, it will be important to take into account their geographic and ecological differences.



A MOVING TARGET

The northern long-eared bat was very recently a common bat throughout much of its range. To that end, the Service has records of the species in many areas where it may no longer be present. The position of many Service personnel is that they will defer to previous species records and that negative survey results may not be sufficient to show probable absence where historic records exist. Additionally, in the western regions of the species' range, northern long-eared bat populations may not

continued on page 15

INTERIM 4(d) RULE EXEMPT ACTIVITIES

The following activities within WNS-affected areas may be exempt from requiring an incidental take permit:

- forest and prairie management
- routine maintenance and limited expansion of existing rights-of-way and transmission corridors
- projects resulting in minimal tree removal
- hazardous tree removal
- removal of bats from and disturbance within human structures
- capture and handling of bats for scientific purposes

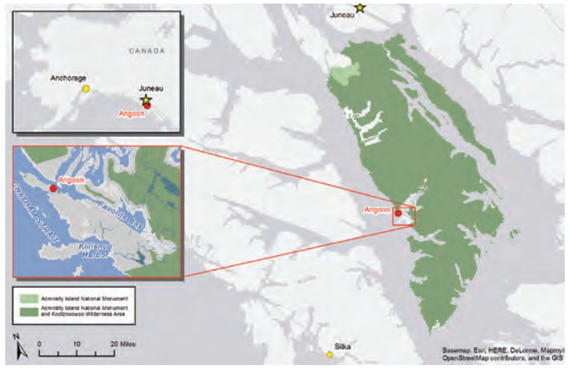
CONSERVATION MEASURES

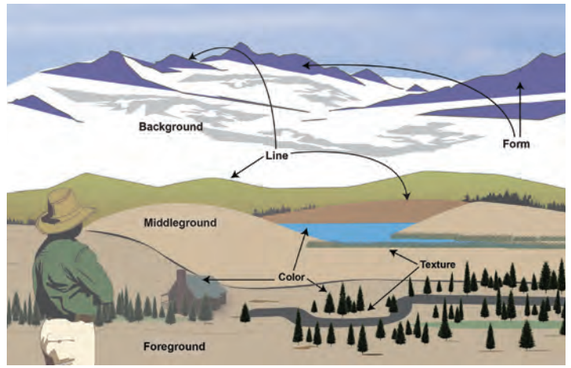
In order to qualify as exempt under the 4(d) rule, the activities to the left must:

- occur more than 0.25 mile from a known occupied hibernaculum
- avoid cutting or destroying known, occupied roost trees during the pup season (June 1-July 31)
- avoid clearcutting (and similar harvest methods, such as seed tree harvesting, shelterwood cutting, and coppicing) within 0.25 mile of known, occupied roost trees during the pup season

continued from page 11

and figures that help explain scientific and technical concepts. This ranges from something as simple as including a photograph of the area to more complicated graphics and maps detailing effects. For example, the bullets listing characteristics of a certain habitat would be layered onto a map showing the location of the habitat. This makes it easy for the reader to visualize the potential environmental effects across a project area and to compare the effects in different areas. Another example shows — rather than using descriptive text — the technical terms for how visual character is evaluated.





Wire: What has the response been so far?

Childs: The FAA-SWCA team has received positive feedback from numerous federal agencies, including the Environmental Protection Agency and the U.S. Forest Service, as well as private groups. In general, those who prefer to have an electronic version for review have appreciated the hyperlinking functionality of the document and the plain language approach. For example, the Aldo Leopold Wilderness Research Institute told us, "This report is of such quality that I have used, and will continue to use, this EIS as an example for land managers and NEPA practitioners to learn how assessing project effects on wilderness character can, and should be conducted."

Wire: When would other projects benefit from this approach?

Childs: There are many reasons this three-pronged approach of plain language, navigable structure, and graphics — or any of its components individually — can benefit a project. Project developers should consider the following:

- Who is the audience for my NEPA document?
  - Is my audience primarily composed of technical or legal specialists who are already familiar with NEPA? Or is the audience primarily lay people who would benefit from an explanation of technical terms, scientific concepts, and legal requirements?
  - Would the audience be interested in reading an electronic version of the document? Hard copies are expensive to print! One EIS hard copy following this approach can easily cost $300-$400 due to the additional use of color and graphics.
- Is my project publicly controversial, and would it benefit from emphasizing the NEPA cornerstone of public disclosure by using plain language, a navigable structure, and graphics?
- Do I have an especially detailed review process or demanding group of reviewers?

Putting typical EIS content through the rigors of a plain language translation also often exposes problems in logic or data. It's an excellent way to scrub the content, check the logic of an argument, and make an EIS scientifically and legally defensible.

If these considerations apply to a project, any or all of the three reader-friendly components can improve the end product. ■

For more information about the Angoon Airport project, contact **Amanda Childs** at **achilds@swca.com**. To view the electronic version of the EIS, visit **www.angoonairporteis.com.**

Graphics and maps by John Pecorelli and Allen Stutz.

continued from page 13

be heavily impacted by WNS — yet. In these areas, developers whose projects are not exempt under the interim 4(d) rule may need to incorporate conservation measures — such as minimization of clearing, and clearing within certain seasonal windows — into their projects for a species that is regionally abundant but still protected under the ESA.

Unfortunately there is no one-size-fits-all recommendation for ESA compliance. Each Service field office will have a different approach relative to the northern long-eared bat, with solutions potentially varying greatly from project to project. For example, the Frankfort, Ky., field office developed a Conservation Memorandum of Agreement (CMOA) program for Indiana bats. This program allows for project proponents to quantify the impact their project will have on Indiana bats and offset that impact through some type of mitigation, including the option to make a contribution to the Indiana Bat Conservation Fund. Any take occurring as a result of a project is then covered under a Biological Opinion and Incidental Take Statement (permit) developed for the CMOA program. This allows project developers to "shortcut" through the Section 7 consultation process, which can be a lengthy one. The field office subsequently decided to include northern long-eared bats in the CMOA program and renamed the above-mentioned fund as the Imperiled Bat Conservation Fund.

Recent research into possible WNS treatments has produced promising results, although large-scale implementation of any treatment plan may not be economically or logistically feasible. Therefore, it is reasonable to expect that WNS will continue its spread westward, putting more bat populations and additional bat species at risk. The Service is currently reviewing the status of other cave-dwelling bat species in the east, and it is possible that other species will be listed in the future.

Unfortunately, WNS is making life more difficult both for northern long-eared bats and for project developers working in areas the bats call home. ■

For more information on the bat survey, mitigation, permitting, and compliance services SWCA can provide, contact **Drew Carson** at **dcarson@swca.com** or **Melanie Gregory** at **mgregory@swca.com**.

There is no one-size-fits-all recommendation for ESA compliance for the bat.

SWCA'S BAT-RELATED SERVICES

SWCA assists project developers with an array of Endangered Species Act compliance tasks for bats, including:

- risk assessments,
- in-depth field surveys,
- conservation strategy development, and
- coordination with the Service for incidental take permits.

Several SWCA bat biologists hold permits from the U.S. Fish and Wildlife Service to perform mist netting and other surveys for northern long-eared bats and other protected bat species.

Right, top, a permitted handler carefully trims the fur on a female's back to affix a temporary transmitter that will allow SWCA to track the bat's movement.

Right, bottom, the bat is then banded to identify the individual as it migrates across the landscape from year to year.

Photos by Geoffrey Palmer/SWCA.

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Please visit us on the web at www.swca.com and on social media.

NEWS BRIEFS

New Offices in Fresno, Reno, and Carlsbad

SWCA has opened three new offices to support clients with environmental planning, permitting, and compliance services:

- **Fresno** staff will serve clients in California's Central Valley.
- **Reno** staff will serve clients in northern and wester Nevada in the electricity generation and transmission, transportation, land development, mining, water resources, and federal markets.
- **Carlsbad** staff will serve primarily oil and gas clients operating in the Permian Basin.

We are excited to continue our expansion throughout the West with a local presence in these markets.

Recent Promotions

Chad Baker was promoted to Denver Natural Resources Program Director. Since joining SWCA in 2006, he has contributed to and managed a large variety of projects as a staff biologist, regulatory team lead, and client manager. He has permitting and third-party National Environmental Policy Act experience serving energy industry clients on large-scale oil and gas, seismic, wind, solar, and transmission projects.

Cara Bellavia was named Tucson Office Director in addition to her duties as Phoenix Office Director, a post she has held since 2012. She is working to develop better efficiency and integration of staff and services in Phoenix and Tucson. She has extensive experience in project management, environmental planning, National Environmental Policy Act compliance, social and economic analysis, cultural resource management, and the National Historic Preservation Act.

David Brown was promoted to Natural Resources Program Director in Salt Lake City. He has been with SWCA for 10 years, most recently serving as a strategic growth director and transmission business line lead. He has specialized in transmission line planning, siting, permitting, and compliance with experience in renewable and non-renewable energy development, public utility management, water resource development, land development, conservation planning, environmental restoration, federal land management, and land-use planning.