STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF
AMENDED PETITION TO NOMINATE SURFACE WATERS
IN FOREST SERVICE WILDERNESS AS
OUTSTANDING NATIONAL RESOURCE WATERS, WQCC 10-01 (R)

New Mexico Environment Department,
New Mexico Department of Game and Fish, and
New Mexico Energy, Minerals and Natural Resources Department,

Petitioners;

IN THE MATTER OF
PETITION TO AMEND ANTIDEGRATION
POLICY, 20.4.6.8.A(3) NMAC,

New Mexico Environment Department,

Petitioner;

IN THE MATTER OF
REQUEST TO AMEND ANTIDEGRADATION
POLICY IMPLEMENTATION PROCEDURES and
TO ISSUE GUIDANCE FOR NONPOINT SOURCE
DISCHARGES IN AREAS DESIGNATED AS ONRWS,

New Mexico Environment Department,

Petitioner.

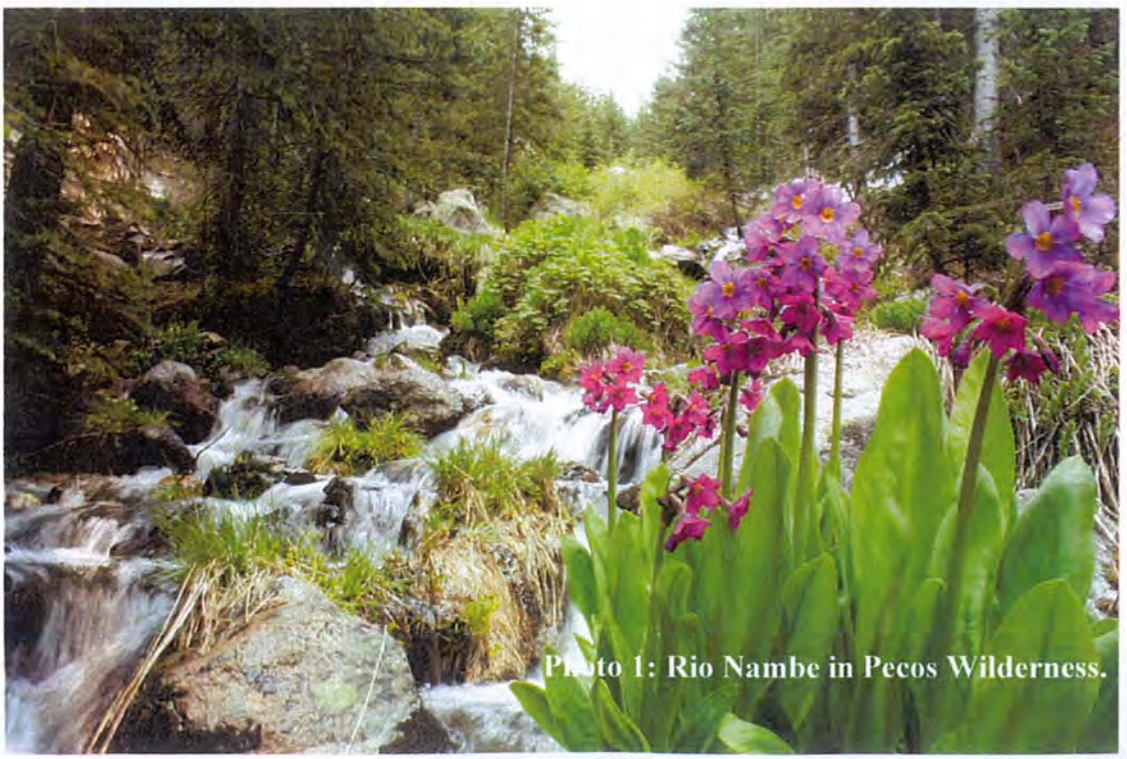

Photo 1: Rio Nambe in Pecos Wilderness.

Preliminary Statement

On Earth Day 2008, Governor Bill Richardson announced the State of New Mexico's intention to seek Outstanding National Resource Water ("ONRW") designation for surface waters within United States Forest Service ("Forest Service") Wilderness areas in New Mexico. If successful, this nomination would protect over 700 miles of 199 perennial rivers and streams, 29 lakes, and approximately 6,000 acres of wetlands. Protecting the state's headwater streams, lakes and wetlands from degradation by designating them as ONRWs will establish a foundation for long-term preservation and restoration of some of New Mexico's most significant surface waters. Protection of these waters will help maintain a clean water supply for uses in Wilderness areas and for downstream uses by municipalities, agricultural, and recreational interests, and will help maintain healthy, functioning ecosystems, preserve habitat, and protect endangered and threatened species.

In order to protect these waters, this Amended Petition requests the Water Quality Control Commission ("Commission") to take four integrally related actions. First, pursuant to Section 20.6.4.9.A NMAC and the Guidelines for Commission Regulation Hearings, the New Mexico Environment Department ("NMED"), the New Mexico Department of Game and Fish ("NMDGF"), and the New Mexico Energy, Minerals and Natural Resources Department (collectively "Petitioners") petition to nominate named perennial surface waters of the state in Wilderness within Forest Service lands as ONRWs. The waters nominated for ONRW designation in this Amended Petition represent waters that are a significant attribute of a designated Wilderness area; are part of a designated wild river under the federal Wild and Scenic Rivers Act ("WSRA"); are a significant attribute of a state gold medal trout fishery; or have exceptional recreational or ecological significance and, therefore, are eligible for the highest

protection under the Commission's Regulations. 20.6.4.9.B(1) and -(2) NMAC. Petitioners' nomination is set forth in proposed amendments to 20.6.4.9.D NMAC, set forth in Section I.A.1 of this Amended Petition and attached as Exhibit 1.

Second, pursuant to NMSA 1978, § 74-6-4(C) and the Guidelines for Commission Regulation Hearings, NMED petitions the Commission to amend the Commission's Antidegradation Policy and Implementation Plan ("Antidegradation Policy") set forth in 20.6.4.8.A(3) NMAC. The proposed amendments to the Antidegradation Policy revise the regulatory framework for protection of surface waters of the state, including ONRWs. The proposed revisions to the Antidegradation Policy are set forth in proposed amendments to 20.6.4.7 and -8.A NMAC, set forth in Section II.B.1 below and in Exhibit 1.

Third, pursuant to NMSA 1978, § 74-6-4(B), NMED requests the Commission to approve amendments to the Antidegradation Policy Implementation Procedures ("Antidegradation Procedures"), found at Appendix 1 of the State's Continuing Planning Process ("CPP") document.[1] The Antidegradation Procedures establish procedures for implementing the Antidegradation Policy for permitted discharges to all surface waters, including ONRWs. The proposed amendments to the Antidegradation Procedures are set forth in Exhibit 2, attached.

Fourth, pursuant to NMSA 1978, § 74-6-4(B), NMED requests the Commission to approve a new document, Guidance for Nonpoint Source Discharges in Areas Designated as Outstanding National Resource Waters ("Nonpoint Source Guidance"). The Nonpoint Source Guidance would establish guidelines for implementing the Antidegradation Policy as it applies to nonpoint source discharges that have potential to impact ONRWs. The proposed Nonpoint Source Guidance is set forth in Exhibit 3, attached.

[1] The CPP may be found in full at http://www.nmenv.state.nm.us/swqb/cpp/2004cpp.pdf.

I. NOMINATION OF PERENNIAL SURFACE WATERS WITHIN FOREST SERVICE WILDERNESS

A. Nomination of Perennial Waters within Forest Service Wilderness

1. Nomination

Petitioners request the Commission to designate named perennial surface waters of the state that are located within Forest Service Wilderness as ONRWs by amending 20.6.4.9.D NMAC as follows:

> **D. Waters classified as ONRWs:** The following waters are classified as ONRWs:
>
> . . .
>
> **(3)** the named perennial surface waters of the state, identified in subparagraph (a) below, located within United States department of agriculture forest service wilderness. Wilderness are those lands designated by the United States congress as wilderness pursuant to the Wilderness Act. Wilderness areas included in this designation are the Aldo Leopold Wilderness, Apache Kid Wilderness, Blue Range Wilderness, Chama River Canyon Wilderness, Cruces Basin Wilderness, Dome Wilderness, Gila Wilderness, Latir Peak Wilderness, Pecos Wilderness, San Pedro Parks Wilderness, Wheeler Peak Wilderness, and White Mountain Wilderness.
>
> **(a)** The following waters are designated:

(i) RIO GRANDE BASIN

WILDERNESS	WATER NAME
Aldo Leopold	Byers Run
	Circle Seven Creek
	Flower Canyon
	Holden Prong
	Indian Canyon
	Las Animas Creek
	Mud Spring Canyon
	North Fork Palomas Creek
	North Seco Creek
	Pretty Canyon
	Sids Prong
	South Animas Canyon
	Victorio Park Canyon
	Water Canyon
Apache Kid	Indian Creek
	Smith Canyon
Chama River Canyon	Chavez Canyon
	Ojitos Canyon
	Rio Chama

WILDERNESS	WATER NAME
Cruces Basin	Beaver Creek
	Cruces Creek
	Diablo Creek
	Escondido Creek
	Lobo Creek
	Osha Creek
Dome	Capulin Creek
	Medio Creek
	Sanchez Canyon/Creek
Latir Peak	Bull Creek
	Bull Creek Lake
	Heart Lake
	Lagunitas Fork
	Lake Fork Creek
	Rito del Medio
	Rito Primero
	West Latir Creek
Pecos	Agua Sarca
	Hidden Lake

WILDERNESS	WATER NAME
	Horseshoe Lake (Alamitos)
	Jose Vigil Lake
	Nambe Lake
	Nat Lake IV
	No Fish Lake
	North Fork Rio Quemado
	Rinconada
	Rio Capulin
	Rio de las Trampas (Trampas Cr)
	Rio de Truchas
	Rio Frijoles
	Rio Medio
	Rio Molino
	Rio Nambe
	Rio San Leonardo
	Rito con Agua
	Rito Gallina
	Rito Jaroso
	Rito Quemado
	San Leonardo Lake
	Santa Fe Lake
	Santa Fe River
	Serpent Lake
	South Fork Rio Quemado
	Trampas Lake (East)
	Trampas Lake (West)
	Wild Horse Canyon
San Pedro Parks	Agua Sarca
	Canon Madera
	Cave Creek
	Cecilia Canyon Creek

WILDERNESS	WATER NAME
	Clear Creek (North SPP)
	Clear Creek (South SPP)
	Corralitos Creek
	Dove Creek
	Jose Miguel Creek
	La Jara Creek
	Oso Creek
	Rio Capulin
	Rio de las Vacas
	Rio Gallina
	Rio Puerco de Chama
	Rito Anastacio East
	Rito Anastacio West
	Rito de las Palomas
	Rito de las Perchas
	Rito de los Pinos
	Rito de los Utes
	Rito Leche
	Rito Redondo
	Rito Resumidero
	San Gregorio Lake
Wheeler Peak	Black Copper Canyon
	East Fork Red River
	Elk Lake
	Horseshoe Lake
	Lost Lake
	Sawmill Creek
	South Fork Lake
	South Fork Rio Hondo
	Williams Lake

(ii) PECOS RIVER BASIN

WILDERNESS	WATER NAME
Pecos	Albright Creek
	Bear Creek
	Beatty Creek
	Beaver Creek
	Carpenter Creek
	Cascade Canyon
	Cave Creek
	El Porvenir Creek
	Hollinger Creek
	Holy Ghost Creek
	Horsethief Creek
	Jack's Creek
	Jarosa Canyon/Creek
	Johnson Lake
	Lake Katherine
	Lost Bear Lake
	Noisy Brook

WILDERNESS	WATER NAME
	Panchuela Creek
	Pecos Baldy Lake
	Pecos River
	Rinconada
	Rio Mora
	Rio Valdez
	Rito Azul
	Rito de los Chimayosos
	Rito de los Esteros
	Rito del Oso
	Rito del Padre
	Rito las Trampas
	Rito Maestas
	Rito Oscuro
	Rito Perro
	Rito Sebadilloses
	South Fork Bear Creek

WILDERNESS	WATER NAME
	South Fork Rito Azul
	Spirit Lake
	Stewart Lake
	Truchas Lake (North)
	Truchas Lake (South)
	Winsor Creek
White Mountain	Argentina Creek

WILDERNESS	WATER NAME
	Aspen Creek
	Bonito Creek
	Little Bonito Creek
	Mills Canyon/Creek
	Rodamaker Creek
	South Fork Rio Bonito
	Turkey Canyon/Creek

(iii) GILA RIVER BASIN

WILDERNESS	WATER NAME
Aldo Leopold	Aspen Canyon
	Black Canyon Creek
	Bonner Canyon
	Burnt Canyon
	Diamond Creek
	Falls Canyon
	Fisherman Canyon
	Running Water Canyon
	South Diamond Creek
Gila	Apache Creek
	Black Canyon Creek
	Brush Canyon
	Canyon Creek
	Chicken Coop Canyon
	Clear Creek
	Cooper Canyon
	Cow Creek
	Cub Creek
	Diamond Creek
	East Fork Gila River
	Gila River
	Gilita Creek
	Indian Creek
	Iron Creek
	Langstroth Canyon
	Lilley Canyon
	Little Creek
	Little Turkey Creek

WILDERNESS	WATER NAME
	Lookout Canyon
	McKenna Creek
	Middle Fork Gila River
	Miller Spring Canyon
	Mogollon Creek
	Panther Canyon
	Prior Creek
	Rain Creek
	Raw Meat Creek
	Rocky Canyon
	Sacaton Creek
	Sapillo Creek
	Sheep Corral Canyon
	Skeleton Canyon
	Squaw Creek
	Sycamore Canyon
	Trail Canyon
	Trail Creek
	Trout Creek
	Turkey Creek
	Turkey Feather Creek
	Turnbo Canyon
	West Fork Gila River
	West Fork Mogollon Cr
	White Creek
	Willow Creek
	Woodrow Canyon

(iv) CANADIAN RIVER BASIN

WILDERNESS	WATER NAME
Pecos	Daily Creek
	Johns Canyon
	Middle Fork Lake of Rio de la Casa
	Middle Fork Rio de la Casa
	North Fork Lake of Rio de la Casa

WILDERNESS	WATER NAME
	Rito de Gascon
	Rito San Jose
	Sapello River
	South Fork Rio de la Casa
	Sparks Creek (Manuelitas Cr)

(v) SAN FRANCISCO RIVER BASIN

WILDERNESS	WATER NAME
Blue Range	Pueblo Creek
Gila	Big Dry Creek
	Lipsey Canyon
	Little Dry Creek
	Little Whitewater Creek

WILDERNESS	WATER NAME
	South Fork Whitewater Creek
	Spider Creek
	Spruce Creek
	Whitewater Creek

(vi) MIMBRES CLOSED BASIN

WILDERNESS	WATER NAME
Aldo Leopold	Corral Canyon
	Mimbres River

WILDERNESS	WATER NAME
	North Fork Mimbres River
	South Fork Mimbres River

(vii) TULAROSA CLOSED BASIN

WILDERNESS	WATER NAME
White Mountain	Indian Creek
	Nogal Arroyo
	Three Rivers

b) The wetlands designated are identified on the Maps of Wetlands Within United States Forest Service Wilderness Areas Designated as National Outstanding Resource Waters published at the New Mexico State Library and available on the department's website.

The perennial waters nominated in this Amended Petition are identified by name in the table above by basin, followed by the Forest Service Wilderness area in which they are located. The waters nominated are listed by basin in order to track the Commission's surface water quality standards, which are organized by basin. *See* 20.6.4.50 to 20.6.4806 NMAC. The waters nominated lie within seven basins: the Rio Grande (Upper, Middle and Lower), Pecos River, Gila River, Canadian River, San Francisco River, Mimbres Closed, and Tularosa Closed Basins. The waters lie within 12 Wilderness areas, specifically identified in the proposed nomination above.[2] *See* 11 USC § 1132 (listing all Wilderness designations in New Mexico). Petitioners do not nominate any waters, other than the wetlands discussed below, except the specific perennial waters named and identified in the table above.

[2] The Capitan Mountains, Manzano Mountain, Sandia Mountain, and Withington Wildernesses do not have lakes or perennial streams and, therefore, are not included in this nomination.

The wetlands nominated by Petitioners are identified in pink on the maps of Wilderness areas of the maps that are attached as Exhibits 5 through to this Amended Petition.[3] If wetlands are designated by the Commission as ONRWs, maps of such wetlands will be published in accordance with 1.24.10.22.B NMAC at the New Mexico State Library under the name "Maps of Wetlands Within United States Forest Service Wilderness Areas Designated as National Outstanding Resource Waters" and will also be made available on NMED's website.

This nomination is comprised of 726 miles of 199 perennial rivers and streams, 29 lakes extending 152 acres, and approximately 5,982 acres of wetlands.[4]

B. Regulatory Criteria

1. Procedures for Nomination under 20.6.4.9.A NMAC

Section 20.6.4.9.A NMAC sets forth certain documentation and evidence that must be included in any petition to nominate an ONRW. This Amended Petition satisfies all requirements of 20.6.4.9.A NMAC.

A petition must include maps of the surface waters nominated, including the location and proposed upstream and downstream boundaries. 20.6.4.9.A(1) NMAC. This Amended Petition includes 27 maps of the surface waters nominated. The maps consist of (1) a Statewide

[3] Some smaller wetlands do not appear on the maps. Petitioners will have all wetlands identified on maps when they file their Statement of Intent to Provide Technical Testimony. If any person has a question about the location of wetlands prior to that filing, they may contact NMED counsel, identified below.

[4] The following is a list by basin of the number of stream miles nominated:

Lower Rio Grande	31.75 mi.
Middle Rio Grande	30.67
Upper Rio Grande	172.67
Pecos River	132.69
Gila River	296.69
Canadian River	15.99
San Francisco River	33.69
Mimbres Closed	5.69
Tularosa Closed	5.76

Reference Map, which identifies the Forest Service Wilderness areas in New Mexico that are subject to this Amended Petition, basins and national forests within which nominated waters lie, and major rivers (not identified by name) in each area (Exhibit 4), and (2) 26 maps of Forest Service Wilderness areas, which identify each national forest, the nominated streams, lakes, and the wetlands that are located within the Wilderness area (Exhibits 5-30). The 26 maps of the Wilderness areas identify the location and the upstream and downstream boundaries of the waters nominated. The maps attached are:

Exhibit 4 Statewide Reference Map
Exhibit 5 Map of Aldo Leopold Wilderness – North
Exhibit 6 Map of Aldo Leopold Wilderness – Central
Exhibit 7 Map of Aldo Leopold Wilderness – South
Exhibit 8 Map of Gila Wilderness – Central
Exhibit 9 Map of Gila Wilderness – East
Exhibit 10 Map of Gila Wilderness – West
Exhibit 11 Map of Apache Kid Wildernesses – North
Exhibit 12 Map of Apache Kid Wildernesses – South
Exhibit 13 Map of White Mountain Wilderness – North
Exhibit 14 Map of White Mountain Wilderness – South
Exhibit 15 Map of Chama River Canyon Wilderness – North
Exhibit 16 Map of Chama River Canyon Wilderness – South
Exhibit 17 Map of Cruces Basin Wilderness
Exhibit 18 Map of Dome Wilderness
Exhibit 19 Map of Latir Peak Wilderness
Exhibit 20 Map of Pecos Wilderness - Northeast
Exhibit 21 Map of Pecos Wilderness – Northwest
Exhibit 22 Map of Pecos Wilderness – Pecos River 1
Exhibit 23 Map of Pecos Wilderness – Pecos River 2
Exhibit 24 Map of Pecos Wilderness – West Central
Exhibit 25 Map of Pecos Wilderness – Southeast
Exhibit 26 Map of Pecos Wilderness – Southwest
Exhibit 27 Map of San Pedro Parks Wilderness – North
Exhibit 28 Map of San Pedro Parks Wilderness – South
Exhibit 29 Map of Wheeler Peak Wilderness
Exhibit 30 Map of Blue Range Wilderness

The Amended Petition also includes maps of the basins in which the Wilderness areas and nominated waters are located. These maps are:

Exhibit 31-A Map of the Northern Basins and Wilderness Areas
Exhibit 31-B Map of the Central Basins and Wilderness Areas
Exhibit 31-C Map of the Southwestern Basins and Wilderness Areas

A petition must include a written statement and evidence based on scientific principles in support of the nomination, including specific reference to one or more of the applicable ONRW criteria listed in Section 20.6.4.9.B NMAC. 20.6.4.9.A(2) NMAC. This Amended Petition includes sections explaining why the nominated waters (or some of the nominated waters) satisfy the regulatory criteria as a significant attribute of designated Wilderness area, a part of a wild river under the WSRA, a significant attribute of a state gold medal trout fishery, waters that have exceptional ecological significance, and waters that have exceptional recreational significance, *See* Amended Petition, §§ I.D – I.H.

A petition must include water quality data, including chemical, physical, or biological parameters, where available, to establish a baseline condition for the proposed ONRW. 20.6.4.9.A(3) NMAC. This Amended Petition provides all water quality data available to Petitioners for the waters nominated. Amended Petition, § I.I.

A petition must include a discussion of activities that might contribute to reduction of water quality in the proposed ONRW. 20.6.4.9.A(4) NMAC. This discussion is included in Section I.J.

A petition must include additional evidence to substantiate the designation, including a discussion of the economic impact of the designation on the local and regional economy within the state of New Mexico and the benefit to the state. 20.6.4.9.A(5) NMAC. This Amended Petition includes discuss of the economic impact of the designation and the designation's benefit to the state. Amended Petition, § I.K; *see also id.* §§ I.G, I.H (Ecological and Recreational Significance).

A petition must include an affidavit of public of notice of the petition in a newspaper of general circulation in the affected counties and in a newspaper of general statewide circulation, 20.6.4.9.A(6). Evidence of publication in the applicable newspapers of the original Petition is attached as Exhibit 32.[5] This Amended Petition will be noticed in accordance with the requirements of the Water Quality Act, NMSA 1978, § 74-6-6(C), and the Procedural Order, § 302, entered in this matter.

2. Criteria under 20.6.4.9.B NMAC

Section 20.6.4.9.B NMAC sets forth the criteria for designating ONRWs. That section provides:

> B. A surface water of the state, or a portion of a surface water of the state, may be designated as an ONRW where the commission determines that the designation is beneficial to the state of New Mexico, and:
>
> (1) The water is a significant attribute of a state gold medal trout fishery, national or state park, national or state monument, national or state wildlife refuge or designated wilderness area, or is part of a designated wild river under the federal Wild and Scenic Rivers Act; or
>
> (2) The water has exceptional recreational or ecological significance; or
>
> (3) The existing water quality is equal to or better than the numeric criteria for protection of aquatic life uses, recreational uses, and human health uses, and the water has not been significantly modified by human activities in a manner that substantially detracts from its value as a natural resource.

This Amended Petition is based on a demonstration that the nominated waters meet the criteria in 20.6.4.9.B NMAC.

C. <u>Benefit to the State</u>

Designation of the nominated waters would be beneficial to the state of New Mexico because protection of the quality of these waters (1) will help maintain a clean water supply for

[5] Notice of the original Petition was published in a newspaper of general circulation in the state and in the 17 counties in which the Wilderness areas that were subject to the Petition were located. These counties are Bernalillo, Catron, Colfax, Grant, Lincoln, Los Alamos, Mora, Otero, Rio Arriba, San Miguel, Santa Fe, Sandoval, Sierra, Socorro, Taos, Torrance, and Valencia.

users within Wilderness areas and downstream uses by municipalities, agricultural and recreational interests; (2) will help maintain healthy, functioning ecosystems, preserve habitat, and protect endangered and threatened species; (3) will help maintain the recreational benefits in Wilderness areas; and (4) will help support the designated uses of the waters under the Commission's Standards for Interstate and Intrastate Surface Waters or the state's Water Quality Standards ("WQS"), 20.6.4 NMAC.

As the state's population grows and demand for clean water increases, the state will continue to see a shift toward surface water supplies. Santa Fe, Las Vegas, and Albuquerque are currently diverting or are planning diversions from waters that are downstream of Wilderness areas – areas for which ONRW designation would provide greater protection. In addition, the waters used for agriculture flows directly from Wilderness areas. The acequia system, a valued and traditional way of life, is dependent upon clean and abundant water from headwater streams that originate in Wilderness areas in national forests. Much of the surface water in New Mexico flows from high mountain streams that originate in remote and relatively undisturbed areas within Wilderness areas in national forests. The Commission has recognized the high water quality in Wilderness areas and other protected forests. In its 2000 and 2002 CWA § 305(b) Reports to Congress, the Commission stated that the majority of waters determined to fully support designated uses "are in wilderness areas or in watersheds protected from anthropogenic impacts."

D. Significant Attribute of Designated Wilderness Area

A surface water is eligible for ONRW designation if it is a significant attribute of a designated Wilderness area. 20.6.4.9.B(1) NMAC. The Wilderness Act was enacted by Congress in 1964. *See* 16 USC §§ 1131-36. The Act is eloquent is its description of

"wilderness":

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

16 USC 1131(c). Wilderness areas may only be designated by an act of Congress. A key goal of designating areas as Wilderness is to protect and preserve the land's "natural conditions." *Id.* A significant natural condition of any Wilderness area is the area's rivers, streams, lakes, and wetlands. Wilderness waters embody the recreational, ecological, geological, scientific, scenic and historic values that the Act seeks to preserve and protect for future generations. *Id.*

Wilderness areas in Forest Service land in New Mexico have been designated primarily through three congressional acts: the initial 1964 act (designating the Gila, Pecos, San Pedro Parks, White Mountain, and Wheeler Wildernesses), a 1978 designation (designating the Chama River Canyon Wildernesses), and a 1980 designation (designating the Aldo Leopold, Apache Kid, Blue Range, Cruces Basin, Dome, and Latir Peak Wildernesses (and adding to the Gila, Pecos, Wheeler Peak, and White Mountain Wildernesses)). Pub. L. 88-577, 78 Stat. 890 (Sept. 3, 1964); Pub. L. 95-237, 92 Stat. 40 (Feb. 24, 1978); Pub. L. 96-550, 94 Stat. 3221 (Dec. 19, 1980). In the 1978 and 1980 designations, protection of each area's "watersheds" was one the purposes for which these areas were designated. Pub. L. 95-237, § 1(b); Pub. L. 96-550, § 101.

Through these Wilderness designations, Congress recognized that these areas' watersheds are of "national interest" and significance. Pub. L. 95-237, § 1(b).

The waters within Wilderness are a significant attribute because of their ecological, recreational, scenic, scientific and historic value. This is especially true for New Mexico, an arid state, where surface waters are highly valued. Upland and mountain wilderness areas often provide sources of clean water originating in the natural environments. http://www.wilderness.net/index.cfm?fuse=NWPS&sec=legisoverview.

> Wilderness streams are a unique and valued resource, offering many of the "enduring benefits" envisioned by passage of the Wilderness Act of 1964. These benefits include fresh water and places to fish, relax, and enjoy nature; unique habitats for plants and animals; reference sites to judge direct and indirect impacts to our natural environment; and perhaps a place where we can learn how to be stewards of the land and water. Wilderness streams, because they are relatively unaffected by people compared to most other streams, present one of the best opportunities for learning about stream ecosystems and how they function. The value of wilderness streams as a place to learn and as an ecological benchmark to judge impacts is growing daily.

Davis, 2001. In particular, the waters nominated are a significant attribute of the Wilderness area in which they are located because of their ecological and recreational importance, discussed in more detailed below, in Sections I.G and I.H.

E. Part of a Designated Wild River

A surface water is subject to ONRW designation if it is "part of a designated wild river under the federal Wild and Scenic Rivers Act." 20.6.4.9.B(1) NMAC. Portions of two of the rivers nominated, the Pecos River and the Rio Chama, have been designated as wild under the WSRA.[6] The Pecos River is located within the Pecos Wilderness in the Pecos River Basin. Approximately 14 miles of the river that is located within Wilderness is designated as wild. That

[6] Portions of only two other rivers in New Mexico, the East Fork Jemez and Rio Grande, have been designated under the WSRA.

segment of the Pecos River is shown on maps of the Pecos Wilderness in Exhibits 20, 21, and 23. The Rio Chama is located within the Chama River Canyon Wilderness in the Rio Grande Basin. Approximately 5 miles of the Wild and Scenic Rio Chama is designated as wild. That segment of the Rio Chama is shown on a map of the Chama River Canyon Wilderness in Exhibit 15. These segments of the Pecos River and Rio Chama meet the criteria of 20.6.4.9(B)(1) NMAC.

The WSRA protects rivers that are deemed by Congress to be particularly scenic and valuable. *See* 16 USC §§ 1271-87. The designation is specifically intended to protect the free-flowing character of the nation's finest rivers. *Id.* § 1271. According to the WSRA, these rivers "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations." *Id.*

WRSA and ONRW designations are complimentary; each secures the protection of different qualities of land and water. ONRW designation protects water quality, while the WSRA protects natural flows and scenic integrity. Thus, while both designation protects a river's natural qualities, the designations serve different interests, and are mutually reinforcing and not redundant.

F. <u>Significant Attribute of State Gold Medal Trout Fishery</u>

A surface water is eligible for ONRW designation if it is a significant attribute of a state gold medal trout fishery. 20.6.4.9.B(1) NMAC. During the 2005 hearing before the Commission on designation of the Valle Vidal as an ONRW, the Commission learned that the term "state gold medal trout fishery" is used in the State of Colorado's water quality standards,

but that NMDGF uses the term "Special Trout Waters." *See* 19.31.4.11.A(4) NMAC.[7] Special Trout Waters have very reduced bag limits or allow fishing on a catch-and-release basis only. *Id.* Not only does this classification give anglers a chance for quality fishing, but the regulations indirectly protect the riparian ecosystem surrounding the water because disturbing rocks, plants, or sediment to attract fish in these waters is illegal. 19.31.10.14.S(2) NMAC.

The water in Special Trout Waters is, by definition, a "significant attribute" of these waters. Protection of water quality is beneficial to help protect these fishing areas. Six of the nominated streams have segments that are classified as Special Trout Waters, as identified in Table 1 that follows. The segments of Special Trout Waters that are located in Wilderness are identified on each Wilderness area map applicable to the particular Special Trout Water. *See* Exs. 6, 8, 10, 20, 21, 22, 23. The portions of these six streams located within Forest Service Wilderness that are classified as Special Trout Waters are entitled to ONRW protection.

[7] NMED, therefore, in the December 2009 Triennial Review hearing before the Commission proposed to change the language in 20.6.4.9.B(1) NMAC from "state gold medal trout fishery" to "special trout water" to reflect the NMDGF regulatory term.

Table 1: Nominated Streams Classified as Special Trout Waters.

WILDERNES AREA	WATER BODY	BASIN AND LOCATION	COMMENTS
Aldo Leopold Wilderness			
	Black Canyon Creek	Gila Basin; from barrier at Black Canyon Campground upstream; *see* Ex. 6	This creek is both in the Gila and the Aldo Leopold, but Special Trout Waters are only in Aldo Leopold; designation is to protect genetic stock of Gila trout.
Gila Wilderness			
	Iron Creek	Gila Basin; from barrier 4 mi upstream of Turkey Feather Trail to its headwaters; *see* Ex. 8	This creek is entirely contained within the Gila Wilderness, but only a portion is Special Trout Water to protect pure genetic stock of Gila trout.
	Mogollon Creek	Gila Basin; from barrier at waterfalls near Forest Service Trail 153 to confluence of Trail Canyon; *see* Exs. 8, 10	The portion within the Gila Wilderness is Special Trout Water to protect Gila trout genetic stock.
Pecos Wilderness			
	Jack's Creek	Pecos River Basin; from the waterfalls located .25 mi downstream of NM 63 crossing upstream to headwaters; *see* Ex. 22	A portion of Jack's Creek Special Trout Waters start below the Wilderness boundary, but most of the Special Trout Water reach is inside the boundary.
	Pecos River	Pecos River Basin; above Pecos Falls to headwaters; *see* Exs. 20, 21, 22, 23	
	Rio Valdez	Pecos River Basin; from 0.25 miles below Smith Cabin upstream to headwaters; *see* Ex. 20	Water body all in Wilderness, almost entire length of Rio Valdez is a Special Trout Water.

G. Ecological Significance

1. General

Surface waters are eligible for designation as ONRWs if they have exceptional ecological significance. 20.6.4.9(B)(2) NMAC. The overwhelming majority of New Mexico residents find it "moderately to extremely important" to conserve New Mexico's biological diversity, and to protect and improve lands and waters used by fish and wildlife. NMDGF 2006.[8] The waters nominated in this proposal are important to some plant, fish, bird, invertebrate, and mammal species in New Mexico. Wetlands and riparian habitats comprise less than 1% of New Mexico's landscape, Dahl 1990; Henrickson and Johnston 1986, yet more than 80% of all sensitive and specially classified vertebrate species in New Mexico require riparian habitat for some part of their life cycle. NMDGF 2006a. Dry-end wetlands, such as isolated seasonal wetlands and riparian wetlands associated with first order streams, are important landscape elements. They often support high biodiversity and are impacted by human activities more than other types of wetlands. Whigham 1999. Twenty-five percent of the wildlife species that rely on aquatic, wetland, or riparian habitat are listed as state threatened or

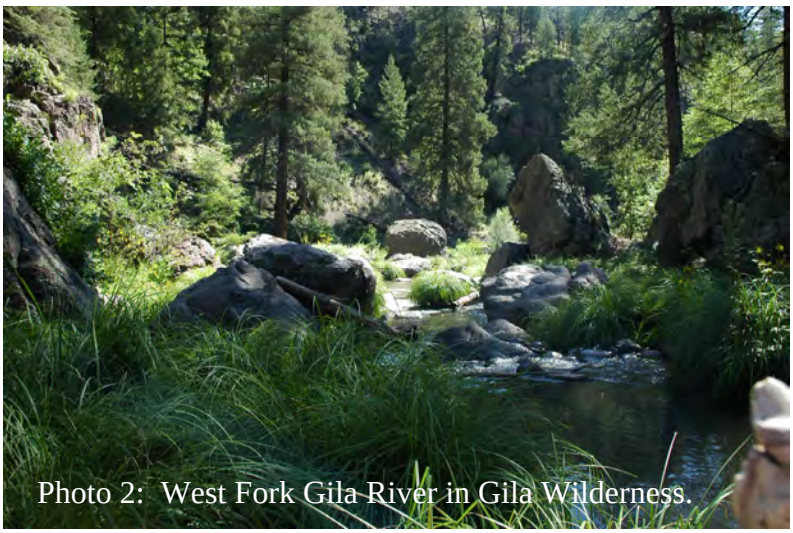

Photo 2: West Fork Gila River in Gila Wilderness.

[8] References relied upon is this Amended Petition are listed in Appendix 1, attached. The References are cited by author and year of publication.

endangered. NMDGF 2006a.[9] Forty-one percent of Species of Greatest Conservation Need ("SGCN") (as designated by NMDGF) associated with riparian habitats are considered vulnerable, imperiled or critically imperiled both statewide and nationally. NMDGF 2006a. NMDGF's Comprehensive Wildlife Conservation Strategy identifies riparian and aquatic habitats as a key area upon which to focus conservation efforts. NMDGF 2006a. These are key habitats due to the high species diversity found there, the magnitude of multiple habitat altering factors, and the lack of legal constraints or long-term management plans for protection from land use conversion. NMDGF 2006a. Preserving wetland and riparian habitat and water quality in New Mexico is important for maintaining healthy, functioning ecosystems.

Thirty-two of New Mexico's wildlife species are listed under the federal Endangered Species Act. These include 2 arthropods, 5 mollusks, 13 fishes, 1 amphibian, 1 reptile, 5 birds, and 5 mammals. USFWS 2009. New Mexico has 116 species listed as state threatened or endangered. NMDGF 2008b. These include 27 invertebrates, 22 fishes, 6 amphibians, 15 reptiles, 32 birds, and 14 mammals. NMDGF 2008b. In addition, 452 SCGN have been identified by NMDGF. NMDGF 2006a. Of these species, 80% rely on riparian ecosystems during some part of their life cycle. NMDGF 2006a. Maintaining water quality is critically

[9] "State endangered" refers to any species of fish or wildlife whose prospects of survival or recruitment within the state are in jeopardy due to any of the following factors: (1) the present or threatened destruction, modification or curtailment of its habitat; (2) overutilization for scientific, commercial or sporting purposes; (3) the effect of disease or predation; (4) other natural or man-made factors affecting its prospects of survival or recruitment within the state; or (5) any combination of the foregoing factors. NMSA 1978, § 17-2-38(D). "State threatened" refers to any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range in New Mexico. NMSA 1978, § 17-.2-38(M). "Species of greatest conservation need" or "SGCN" means species that are indicative of the diversity and health of New Mexico's wildlife, including species with low and declining populations, and species of high recreational, economic, or charismatic value. "Imperiled" means vulnerable because of rarity due to very restricted range, very few populations, steep declines, or other factors making it vulnerable to extirpation or extinction. "Federal endangered" means a species in danger of extinction throughout all or a significant portion of its range under the federal Endangered Species Act ("ESA"). "Federal threatened" means a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range under the federal ESA.

important for providing intact, healthy, and functional biotic assemblages and may assist in preventing extinction or additional listings.

A number of aquatic macroinvertebrates are identified as SGCNs in New Mexico. These include species of snails, clams and shrimp. Fifty-seven percent of SGCN mollusks and crustaceans are considered vulnerable or imperiled both statewide and nationally. NMDGF 2006a. Populations of these species are likely to be supported by the protection of water quality in the nominated streams.

Aquatic ecosystems in New Mexico support a relatively high number of endemic fish. For example, 30% of native fish species in the Rio Grande are endemic to the Rio Grande. Grahame and Sisk 2002. Additionally, 30% of fish species in New Mexico are at risk and, regionally, and more than 48% of the fishes in the Southwest are jeopardized, compared with 19% in the Northwest and 10% in the Southeast. Warren and Burr 1994. New Mexico has 66 native freshwater fishes with 20 of these considered as imperiled. Warren and Burr 1994. Anthropogenic effects on hydrology, competition and predation with and by nonnative species, reduced water quality, aquatic invasive species, and changes in surrounding land use are the primary threats to these species. Habitat conservation is an important part of preserving native fish populations and is a significant benefit of the ONRW designation. Small populations with narrow distributions would particularly benefit from habitat preservation.

The New Mexico state fish, the Rio Grande cutthroat trout (*Oncorhynchus clarkii virginalis*) (SGCN), would benefit from protection of the nominated waters. Fifty-four percent of Rio Grande cutthroat trout conservation populations are located on Forest Service land. Alves, *et al.* 2008. ONRW designation can assist in the species' recovery by maintaining the relatively high quality water that already exists in the nominated streams; cutthroat trout habitats

are located in streams in the Dome, Pecos, San Pedro Parks, and Wheeler Peak Wildernesses.


Photo 3: Rio Grande cutthroat

Riparian reptile species, such as the narrow-headed garter snake (*Thamnophis rufipunctatus*) (SGCN, state threatened), the western ribbonsnake (*Thamnophis proximus*) (SGCN, state threatened), the painted turtle (*Chyisemys picta*) (SGCN), and the Sonoran mud turtle (*Kinosteron sonoriense*) (SGCN) have been affected by changes in their required aquatic habitat. Competition with, and predation by, non-native species in conjunction with riparian habitat loss has led to smaller populations of these species with more limited ranges. By protecting rivers of an outstanding quality, some riparian habitats required by these species will also be protected.

There are several aquatic species of frog, salamander, and toad that have been designated SGCNs. The Jemez Mountains salamander (*Plethodon neomexicanus*) (SGCN, state endangered) and the Sacramento Mountains salamander (*Aneides hardii*) (SGCN, state threatened) are endemic to New Mexico.

The boreal toad (*Anaxyrus boreas*) (SGCN, state endangered) is native to northern New Mexico. The toad inhabits a variety of wet habitats (*e.g.*, slow-moving streams, lakes, marshes, alpine meadows, and beaver ponds) associated with lodgepole pine or spruce-fir forests at altitudes primarily between 7,380 and 11,810 feet. Pierce 2006. In the past 30 years, there has been a significant decline in the Rocky Mountain population of boreal toads.

The northern leopard frog (*Rana pipiens*) (SGCN) is found along permanent water from desert lowlands to high elevation pine forests in New Mexico. Leopard frog populations have been declining due to, in part, competition from introduced species. Maintaining the quality of the frog's riparian habitat would reduce the likelihood of dominance by introduced species.

Photo 4. Northern leopard frog.

There are 63 bird SGCNs associated with wetland and riparian habitats, including the osprey, and several species of hummingbird, warbler, flycatcher, quail, thrasher, owl, hawk, and bunting. NMDGF 2006a. Many need access to water during nesting seasons or rely on prey species that live near water. In addition, many are affected by human disturbances and thus their populations are most successful in areas that remain protected from ecological disruption.

Mexican spotted owls (*Strix occidentalis lucida*) (federal threatened) require canyons with riparian and conifer habitat for their survival. They depend on old growth forests and are threatened by logging, wildfire, road construction, and human activity near their nesting, roosting, or foraging sites. USFWS 1995. Mexican spotted owls have been extirpated from major riparian corridors due to the significant alteration that has occurred on these rivers. FWS 1995. The United States Fish and Wildlife Service ("USFWS") has designated critical habitat for this species and 10 of the Wilderness area included in this nomination fall within Mexican spotted owl critical habitat. Protecting water in this nomination will continue to protect habitat for Mexican spotted owls and their prey.

The peregrine falcon (*Falco peregrinus*) (state threatened) also lives and breeds near the nominated waters. This species has been recovering from near extinction in the 1940s. The falcon primarily hunts other birds, many of which congregate near riparian areas. It nests on cliffs and these sites are often located near water. Protecting the water quality in the nominated regions and, thus the quality of habitat for the prey species, would contribute to the falcon's continued recovery.

Riparian habitats are important for many mammal species in New Mexico. Mammals that are associated with riparian habitats include several species of shrew, mouse, bat, and vole. Larger mammals that rely on riparian ecosystems include the common muskrat (*Ondatra zibethicus*) and American beaver (*Castor canadensis*).

Many game species rely on riparian areas. They include elk (*Cervus elaphus*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), black bear (*Ursus americanus*), and mule deer (*Odocoileus hemionus*). The nominated waters and their adjacent riparian ecosystems provide indispensable habitat for these and many other mammalian species in the mountains and rivers of New Mexico.

Wetland and riparian plants are important to the aquatic ecosystems of the nominated streams; they provide the habitat and food source for many wildlife species. Some of these stream banks and valley bottoms are habitats for very rare plant species including Arizona willow (*Salix arizonica*) and Goodding's onion (*Allium gooddingi*) (state endangered). NMRPTC 2009.

2. Upper Rio Grande Basin

The Upper Rio Grande Basin includes 173 miles of perennial streams in Pecos, Latir Peak, Wheeler Peak, Chama River Canyon, San Pedro Parks, and Cruces Basin Wilderness

areas. The elevation of the nominated area in this basin ranges from 6,000 feet to 13,161. The region is located in the Arizona-New Mexico Mountains and the Southern Rocky Mountains ecoregions as defined by The Nature Conservancy; however the Wilderness areas fall entirely within the Southern Rocky Mountains ecoregion. Groves, e*t al.* 2002. Twenty-five miles of the Rio Chama have been designated as a Wild and Scenic River, five of which is in Wilderness area, as discussed above.

The Upper Rio Grande Basin is unique in that it has the highest peak in the state. Wheeler Peak provides a rare alpine tundra habitat that is found only in a few other places in New Mexico. Latir Peak Wilderness also has high alpine habitat – mesas at 12,000 feet and 3 peaks over 12,500 feet. Due to their remoteness, these areas retain their pristine and primitive nature.

In New Mexico, the Lilljeborg's peaclam (*Pisidium Lilljeborgi*) (state threatened) is found only in Nambe Lake in the Pecos Wilderness. Nambe Lake, in the Pecos Wilderness, is a nominated water. Due to its restricted distribution, the Nambe Lake population of Lilljeborg's peaclam is vulnerable to natural stochastic events such as fire, sedimentation, and drought. NMDGF 2006a.

Photo 5: Jemez Mountains

The Jemez Mountains salamander (state endangered) is endemic to the Jemez Mountains; its range is limited to 375 square miles in the high elevations of the Jemez Mountains. NMEST 2000. It is a rare and localized species, but it is common in small areas of suitable habitat of loose

rocky soils in and under rotting coniferous logs or under rocks. Degenhardt, *et al.* 1996. It has specific habitat and microhabitat requirements, including exacting moisture requirements – the Jemez Mountain salamander is a lungless salamander and must stay moist in order to breathe. NMEST 2000. Threats to this species include any activity that will cause the ground surface microhabitat to become drier. This includes logging, road building, livestock grazing, and climate change. The potential for stand-replacing wildfire is the greatest threat to this species. Water quality protection is important for the survival of all amphibians and will provide essential protection for this rare species.

The Rio Grande cutthroat trout is one of two trout species that are native to New Mexico. The historic range of the Rio Grande cutthroat is not definitively known, but likely included all small, swift-running, cold streams capable of supporting trout in the Rio Grande, Pecos, and Canadian drainages. Prichard and Cowley 2006. The species currently occupies about 10% of its historical range in the Rio Grande, Canadian, and Pecos drainages. Alves, *et al.* 2008; Prichard and Cowley 2006. They are present in 3 streams in the San Pedro Parks Wilderness, 7 streams in the Pecos Wilderness, and 1 stream each in the Wheeler Peak and Dome Wildernesses. Rio Grande cutthroat trout require clear, cold water, silt-free rocky substrate, stable water flow and temperature regimes, and well vegetated stream banks. Prichard and Cowley 2006. The major threats to Rio Grande cutthroat trout are competition and hybridization with non-native fish species, habitat loss and degradation, fragmentation, and livestock overgrazing. Prichard and Cowley 2006.

3. Pecos River and Canadian River Basins

The Pecos River and Canadian River Basins include 149 miles of perennial streams in the White Mountain and Pecos Wilderness areas. The elevation of the nominated area in these

basins ranges from 6,000 feet to 13,102 feet at Truchas Peak. The basins are located in the Chihuahuan Desert, Southern Shortgrass Prairie, Arizona-New Mexico Mountains, and Southern Rocky Mountains ecoregions as defined by The Nature Conservancy. Groves, *et al.* 2002. The Pecos Wilderness area falls entirely within the Southern Rocky Mountains ecoregion, and the White Mountain Wilderness area falls within the Arizona-New Mexico Mountains ecoregion. Groves, *et al.* 2002.

The Pecos Wilderness lies at the southern end of the Sangre de Cristo Mountains. Over 20 miles of the Pecos River have been designated a Wild and Scenic River, 14 of which are in Wilderness as discussed above, and 3 streams have been designated Special Trout Waters, as shown in Table 1 above. This designation was given for the presence of Rio Grande cutthroat trout, which NMDGF is working to restore.

Jack's Creek, Rio de la Casa, Jarosa Creek, Valdez Creek, and the upper Pecos River (all nominated waters) have the greatest number of Arizona willow populations in this Wilderness area. The canyons of Winsor, Panchuela, and Holy Ghost Creeks (all nominated waters) also have the most of the Wilderness area populations of yellow lady-slipper orchid (*Cypripedium parviflorum* var. *pubescens*) and wood lily (*Lilium philadelphicum*) (state endangered) in New Mexico.

Photo 6:
Nambe Lake in Pecos Wilderness.

4. Middle Rio Grande Basin

The Middle Rio Grande Basin includes 31 miles of perennial streams in the Apache Kid, Dome, and San Pedro Parks Wilderness areas. The elevation of the nominated area in this basin

ranges from 5,000 feet to 10,000 feet. The region is located in the Chihuahuan Desert, Arizona-New Mexico Mountains, and Southern Rocky Mountains ecoregions as defined by The Nature Conservancy. Groves, *et al.* 2002. The Apache Kid Wilderness area falls entirely within the Arizona-New Mexico Mountains ecoregion, and the San Pedro Parks and Dome Wilderness areas fall within the Southern Rocky Mountain ecoregion. Groves, *et al.* 2002.

Game species that rely on water in this basin include Rocky Mountain elk, mule deer, black bear, and mountain lion. Over 80 species of birds live and breed in this region, including the yellow-billed cuckoo (*Coccyzus americanus*), peregrine falcon (state threatened), bald eagle (*Haliaeetus leucocephalus*), and Mexican spotted owl (federal threatened).

Imperiled native fish that inhabit the region are the Rio Grande chub, Rio Grande sucker, and Rio Grande cutthroat trout. NMDGF has restored Rio Grande cutthroat trout populations in streams in Dome and San Pedro Parks Wilderness areas and there are also natural populations found in streams in the region.

5. Tularosa Closed Basin

The Tularosa Closed Basin includes 6 miles of streams in the White Mountain Wilderness area. The elevation of the nominated area in this basin ranges from 5,000 feet to 11,000 feet. The region is located in the Chihuahuan Desert, Southern Shortgrass Prairie, Arizona-New Mexico Mountains, and Southern Rocky Mountains ecoregions as defined by The Nature Conservancy; however the Wilderness areas fall entirely within the Arizona-New Mexico Mountains ecoregion. Groves, *et al.* 2002.

There are virgin stands of mixed conifer as well as large grassland areas that support many wildlife species in the White Mountain Wilderness Area. This Wilderness also has high rugged peaks with several sub-alpine peaks.

6. Gila River, San Francisco River, Mimbres Closed, and Lower Rio Grande Basins

The Gila River, San Francisco River, Mimbres Closed, and the Lower Rio Grande Basins include 341 miles of streams in the Blue Range, Aldo Leopold, and Gila Wilderness areas. The elevation of the nominated area in these basins ranges from 4,500 feet to 10,100 feet. The region is located in the Chihuahuan Desert, Arizona-New Mexico Mountains, and the Apache Highlands ecoregions as defined by The Nature Conservancy, but the Wilderness areas fall entirely within the Arizona-New Mexico Mountains. Groves, *et al.* 2002.

Photo 7:
West Fork Gila River in Gila Wilderness.

The Gila River, San Francisco River, Mimbres Closed, and Lower Rio Grande Basins are located within the Chihuahuan Desert, the largest desert ecosystem in North America. In New Mexico, all but the highest Chihuahuan peaks receive less than 12 inches of annual precipitation. Water is the most important resource in this water-limited region, and the protection of water in this corner of New Mexico is necessary for maintaining its highly diverse and unique ecosystems and for supporting traditional land uses. The Gila River is unique in that it is the only free-flowing (not regulated by impoundment) river in New Mexico. Due to water quality impairments and other threats to the Gila River, the organization American Rivers named the Gila River one of America's Most Endangered Rivers. American Rivers 2008. As well, a substantial segment of the Gila River is included in the Nationwide Rivers Inventory

("NRI").[10] National Park Service. The National Park Service compiles the NRI as part of the WRSA's requirements. The NRI lists river segments that may qualify as national wild, scenic or recreational rivers. The Gila River is included on the inventory because of its "outstanding remarkable values" for wildlife and fish, among other reasons. National Park Service.[11] The Gila River is nominated for ONRW status in this Amended Petition.

The Gila River, San Francisco River, Mimbres Closed, and Lower Rio Grande Basins are located within the Madrean Archipelago, or "sky islands", an area of exceptional species richness. The Madrean Archipelago is made up of a sequence of valleys and mountains that have stacked biotic communities. The mountains, like oceanic islands, act as isolated areas of evolution. The consensus of the researchers and stakeholders attending the *1994 Biodiversity and Management of the Madrean Archipelago Conference* was that the exceptional biodiversity of this region is eroding and preserving "wilderness aspect"' in the mix of research and management is paramount. DeBano and Ffolliott 1995. In these basins, riparian areas are the most productive and valuable land, despite occupying less than 2% of the total land area. Neary, *et al.* 2005. The wildlife in the basins is closely related to and largely dependent on habitat conditions within riparian areas.

Two species of spring snails, Gila springsnail (*Pyrgulopsis gilae)* (state threatened, federal candidate) and New Mexico springsnail (*Pyrgulopsis thermalis*) state threatened, federal candidate), are endemic to the East Fork and Middle Fork Gila Rivers (both nominated waters),

[10] Two-hundred and fifty-five miles of the Gila River, from San Carlos Reservoir in Arizona upstream to the confluence with the East and West Forks of the Gila River, is in the NRI. National Park Service.

[11] In describing the attributes of the Gila River, the NRI notes that the Gila Trout, a federally listed endangered species, is found in the watershed; that 3 areas in New Mexico have been identified by the USFWS as areas of important fish and wildlife habitat; that the Gila River valley is important as habitat for a variety of state listed endangered species, and is unique because of the tremendous diversity of wildlife species found in the area; and that the richest avifauna of any riparian system in New Mexico is found there. National Park Service.

including the upper reach of the mainstem Gila River. NMDGF 2006a.

The Gila River drainage historically supported a comparatively few native fish (13 species), but had a high degree of endemism (5 species). The Gila trout (Oncorhynchus gilae) (federal and state threatened) is endemic to the Gila drainage, but by the mid-20th century the species was limited to only four streams in the upper Gila River system. The species decline was attributed to erosion, sedimentation, the presence of non-native fishes, and overfishing during the early and mid-20th century. Currently, however, non-native fishes are the primary threat to the persistence of Gila trout. The Gila trout currently occupies approximately 5% of its historical range. USFWS 1993. Gila trout require cold, perennial mountain streams, typically above 5,400 feet elevation. Suitable streams typically flow through narrow, steep-sided canyons and valleys. Clean gravel substrates for spawning, a healthy riparian corridor providing abundant cover, and pool habitat that provides refuge during low flow conditions is essential. USFWS 1993.

Photo 8: Gila Trout

The nominated waters include the entire habitat currently occupied by this species in New Mexico. Remnant populations occupy two tributaries to Diamond Creek in the Aldo Leopold Wilderness, one tributary to the San Francisco River, and one tributary to the West Fork Gila River in the Gila Wilderness. Through partnerships with the NMDGF, Gila National Forest, and USFWS, these populations have been replicated into Black Canyon (Aldo Leopold Wilderness), and Langstroth Canyon and White, Little, Big Dry, and Mogollon Creeks (Gila

Wilderness) (all nominated waters). Piscicides applications are currently being conducted on the West Fork Gila River (a nominated water) in order to restore Gila trout into the upper reaches of this system.

The loach minnow (*Tiaroga cobitis*) (federal and state threatened) and spikedace (*Meda fulgida*) (federal threatened, state endangered) have critical habitats designated in the Gila Wilderness, which include some of the ONRW-nominated waters in the Gila Wilderness. Both species are endemic to the Gila River drainage and require moderate-water velocity streams with gravel or cobble bottoms. Stream flow depletion, habitat alteration, watershed deterioration, and competition with non-native fishes are responsible for the decline of these species. USFWS 1991a; USFWS 1991b. Loach minnow is now found in Wilderness reaches of the East Fork Gila River and spikedance persists in Wilderness portions of the West and East Forks Gila River. The spikedace has been extirpated from the San Francisco drainage and, although it has been collected from the Gila River with some regularity, it has declined within this portion of its range in the last 20 years. Paroz and Propst 2007. Both species are currently found in the lower West Fork Gila River, located within the Gila Wilderness area. Paroz and Propst 2007.

Turkey Creek (a nominated water) in the Gila Wilderness also supports the only remaining population of native Gila chub (*Gila intermedia*) (federal and state endangered) in New Mexico. Carman 2006. A portion of Turkey Creek within the Gila Wilderness has been designated as critical habitat for the Gila chub. The only remaining populations of headwater chub (*Gila nigra*) (state endangered) in New Mexico are located in the Gila Wilderness in the Middle Fork Gila River, West Fork Gila River, and the East Fork Gila River. Carman 2006.

The narrow-headed garter snake (state threatened) is confined to warm water reaches of the Gila River and San Francisco River Basins in the Gila Wilderness. It is a highly aquatic

garter snake and is closely associated with clear rocky streams with abundant streamside vegetation. Pierce 2007. Their ideal habitat appears to be rivers with riffles and deep pools with large boulders. Threats to this species include introduction of exotic species (*e.g.*, predatory fishes, New Zealand mudsnail, rocksnot [alga], crayfish, and bullfrogs), over collection, and habitat loss and alteration do to stream alterations. Pierce 2007. Sedimentation from erosion, fires upstream, and overly intensive livestock grazing can adversely affect the species, specifically through the filling in of the interstitial spaces between boulders where the snake prefers to forage. Pierce 2007.

The Mexican gray wolf (*Canis lupus baileyi*) (federal and state endangered) was extirpated from the United States by the mid-1920s and reintroduced to the Blue Range Wolf Recovery Area (an area that encompasses Apache and Gila National Forests) in New Mexico and Arizona in 1998. USFWS 2006. The Mexican gray wolf was once an important part of the ecology of the region as a top predator. Despite reintroduction, the gray wolf is still listed as endangered in New Mexico under the federal Endangered Species Act and the New Mexico Wildlife Conservation Act. Wolves prey mostly on large ungulates (elk, deer, and bighorn sheep), and they are also known to prey on rabbit, beaver, and other small rodents when ungulates are scarce. Protection of areas utilized by the wolf's prey contributes to the success of wolves in the Gila River and San Francisco River Basins. Much of their prey relies on riparian areas.

A large portion of the Wilderness areas within the basin have been designated critical habitat for the Mexican spotted owl (federal threatened). Many of the owl's prey species rely on

Photo 9: Mexican spotted owl.

riparian habitat and associated meadows. Protecting this important habitat and the water needed to maintain it is crucial to sustaining the Mexican spotted owl population in the Gila and San Francisco Basins.

Rare riparian plants of high elevation streams in the Gila Wilderness include Wooton's hawthorn (*Crataegus wootoniana*) and yellow lady-slipper orchid (state endangered) on Little Creek; and Goodding's onion (state endangered) and Mogollon clover (*Trifolium longipes* subsp. *neurophyllum*) on Willow Creek (a nominated water) and the Middle Fork of the Gila River. Arizona coralroot (*Hexalectris spicata* var. *arizonica*) (state endangered) has been found in the upper Percha Creek canyon of the Aldo Leopold Wilderness.

7. Wetlands

In their natural condition, wetlands supply numerous ecological benefits to local communities, including water quality protection, flood control, erosion control, fish and wildlife habitat, and aquatic productivity. One of the most important functions of wetlands is the ability to maintain good surface water quality in rivers, streams, and reservoirs, and to improve degraded surface waters. Wetlands do this several ways: by removing and retaining nutrients, by processing chemical and organic wastes, and by reducing sediment loads. Wetlands are particularly good water filters. Due to their landscape position between uplands and deeper water, wetlands intercept surface water runoff before it reaches open water and filter out nutrients, wastes, and sediments from flood waters.

Wetlands contribute to the recharge of ground water sources of drinking water. During periods of heavy runoff, such as major storms or snowmelt in the spring, wetlands adjacent to streams and in depressions collect excess water. When the water table drops, the water held in the wetlands infiltrates slowly back through the soil into the aquifer to replenish ground water.

(By temporarily storing and slowly releasing flood waters, wetlands help protect adjacent and downstream property owners from flood damage.) Willows and other wetland plants help slow the velocity of flood waters. This action, combined with water storage, allows wetlands to lower flood heights and reduce the water's erosive force.

Wetlands are among the most productive natural ecosystems in the world. A large volume of plant material is produced annually by wetlands. The leaves and stems of wetland plants break down in the water to form small particles of organic material, called detritus. This enriched detritus serves as the base of an aquatic food chain, providing a principal food source for small aquatic invertebrates and forage fishes, which are in turn consumed by larger predatory fish, such as trout. The state’s endemic species of trout, a coldwater species, benefit from cooler water temperatures provided by streamside wetland vegetation along high mountain streams. An estimated 43% of the nation's threatened and endangered species rely directly or indirectly on wetlands for their survival. From an ecological perspective, wetlands such as isolated seasonal wetlands and riparian wetlands associated with first order streams may be the most important landscape elements. They often support a high biodiversity and impacts by human activities are more critical to these wetlands than other types of wetlands.

H. Recreational Significance

> No servant brought them meals. No traffic cop whistled them off the hidden rock in the next rapids. No friendly roof kept them dry when they misguessed whether or not to pitch the tent. No guide showed them which camping spots offered a night-long breeze and which night-long misery of mosquitoes; which firewood made clear coals and which would only smoke. The elemental simplicities of wilderness travel were thrills, because they represented complete freedom to make mistakes. The wilderness gave those rewards and penalties for wise and foolish acts against which civilization has built a thousand buffers.

Aldo Leopold (1887-1948).

1. General

Surface waters are eligible for designation as ONRWs if they have exceptional recreational significance. 20.6.4.9.B(2) NMAC. The perennial waters nominated in this Amended Petition are integral features of Wilderness areas. The presence and quality of these waters ultimately affect the health of the entire Wilderness area and shapes visitors' experiences. Wilderness areas are a significant recreational asset to New Mexico, both qualitatively and economically, and protecting their waters ensures that people will continue to enjoy their favorite Wilderness experiences.

New Mexico is home to the nation's first Forest Service "roadless and wild area" -- now part of the Gila Wilderness – designated by Congress in 1924 at the urging of Aldo Leopold. The federal Wilderness Act was passed in 1964. The Act defines Wilderness as a place where "earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness is "protected and managed so as to preserve its natural conditions" and provides "outstanding opportunities for solitude or a primitive and unconfined type of recreation . . . ." 16 U.S. C. 1131-1136. According to the Forest Service Manual ("FSM"), one of the objectives of Wilderness management is to "[p]rotect and perpetuate wilderness character and public values including, but not limited to, opportunities for scientific study, education, solitude, physical and mental challenge and stimulation, inspiration, and primitive recreation experiences." FSM, § 2320.2.

The recreational significance of Wilderness cannot be overstated. Nationwide, Americans take between 16 and 35 million trips to Wilderness each year to participate in a variety of activities. http://www.wilderness.net/index.cfm?fuse=NWPS&sec=values. New Mexico Wilderness alone receives 1.1 million visits annually. Berrens, *et al*., 2006. Some

Wilderness areas, such as the Pecos Wilderness, are near major urban areas and are heavily used. Others, such as the Gila Wilderness, are well-known destinations for out-of-state visitors. Still others are remote and less well-known, and offer excellent opportunities for the solitude envisioned by the Wilderness Act.

Forest Service Wilderness visitors enjoy hiking, backpacking, hunting, fishing, kayaking, rafting, horse packing, boating, snowshoeing, birding, and extraordinary natural scenery. Hunting and fishing enthusiasts can join a Wilderness expedition with any of the many outfitters in the state or strike out on their own. Trails of varying lengths and difficulty offer endless opportunities for easy family day hikes, extended backpacking trips, and everything in between. Indeed, the Continental Divide National Scenic Trail traverses the entire state from the Cruces Basin Wilderness through the Chama River Canyon, San Pedro Parks, and the Aldo Leopold Wildernesses. In the winter, northern Wilderness areas provide snowshoeing and backcountry skiing terrain.

The presence of streams, rivers, and lakes in Wilderness significantly affects the recreational experience of visitors. In land as arid as New Mexico, the streams, rivers, and lakes provide an important attraction. Obvious and important recreational benefits of rivers, lakes, and streams in Wilderness include fishing, rafting, kayaking, hiking near and along water, and boating. Streams, rivers, and lakes draw recreational visitors for their scenic and ecological value. Hikers and campers are attracted to water settings of streams and lakes, so much so that most high mountain lakes and streams have camping restrictions in order that visitors may enjoy these settings without causing undue resource damage. Backcountry users rely on clean waters sources for drinking when it is not feasible to pack in all their water.

Fishing activity benefits from healthy streams and rivers; it is a highly popular

recreational activity in New Mexico, where waters in scenic surroundings abound. Although most anglers visit road-accessible lakes and streams, many others seek out more pristine settings as found in Wilderness. NMDGF reported 62,500 angler days in the Pecos, Gila and San Pedro Parks Wildernesses. DGF 2007-08. The majority of perennial waters nominated are high mountain streams and lakes, and are designated by the Commission as "high quality coldwater aquatic life," which translates into high quality fishing opportunities. As discussed above, NMGDF has designated six streams in Wilderness as Special Trout Waters due to their recreational and ecological significance. According to a statewide survey, most anglers (57%) prefer fishing for coldwater species such as trout. NMDGF 2009. Rio Grande cutthroat trout have been stocked or restored in waters of the Pecos, Dome and San Pedro Parks Wilderness areas. Native Gila trout have been successfully restored to several nominated waters, some of which are open to fishing. *See* Amended Petition, § I.G. San Gregorio Lake, also nominated, is a popular fishing lake in the San Pedro Parks Wilderness, and is regularly stocked with rainbow trout, as other some other Wilderness streams and lakes. Kokanee salmon, a popular sport-fishing species, is also stocked in some Wilderness streams and lakes. Brown trout are no longer stocked, but have widely established populations in Wilderness areas.

The Chama River Canyon Wilderness is named for its spectacular watercourse that includes a five mile stretch of river designated as wild under the WRSA, as explained above. Hikers, whitewater rafters, kayakers, anglers and many others come to the Rio Chama Gorge to enjoy the spectacular beauty and excellent recreational opportunities. The Gorge is one of the premier places in New Mexico for whitewater activities. Anglers catch Kokanee salmon, black crappie as well as brown and rainbow trout in the Rio Chama. Protection of waters with Wilderness is also essential for other recreational uses, such as boating on the Rio Chama. This

nomination includes the Rio Chama, and adds further protection to this important water.

The recreational value of wetlands may not be as obvious as that of a flowing mountain stream. However, because of their enormous ecological significance, wetlands are centers of biodiversity uncommon in the arid southwest. Wetlands are essential for nesting, feeding, migrating and overwintering birds; and thus are superb attractions for birding, attracting visitors from all over. Photographers and naturalists, from amateur to professional, can observe rare, water-dependent plants and wildlife. Numerous sensitive, threatened and endangered species rely directly or indirectly on the nation's wetlands. *See* Amended Petition, § I.G.7. The casual hiker can enjoy the colors of the marsh marigold in spring or the crimson leaves of Rocky Mountain maple in the fall.

The Pecos Wilderness is a particularly important area for recreation. The Pecos Wilderness area alone receives approximately 48,000 site visits annually. This high visitation rate results in more than $2.6 million net benefits to the state annually. Berrens, *et al.* 2006. The nature of recreation within the Pecos Wilderness is varied, and includes camping, hiking, birding, swimming, boating, horseback riding, hunting, fishing, backpacking, cross-country skiing, and snowshoeing. Many local outfitters lead excursions into the Gila region. Protecting the waters in this Wilderness area will help to sustain this popular recreational destination.

The economic value of outdoor recreation, including Wilderness recreation, is enormous. According to a survey conducted by the USFWS, 947,000 people participated in wildlife-related activities in New Mexico, including hunting, fishing, and wildlife viewing. The amount spent is significant: $823 million in 2006, including travel and equipment expenditures. Expenditures for fishing alone exceeded $300 million.

In addition to providing direct employment, the national forests are a significant indirect

source of income for local economies. USFWS 2006. Locally-owned restaurants, gas stations, groceries, private campgrounds and bed-and-breakfasts all benefit from recreation in Wilderness areas. The 2010 on-line NMDGF directory lists 260 active outfitters in New Mexico. http://www.wildlife.state.nm.us/enforcement/guide_outfitter/outfitters2010.pdf.

2. Forest and Wilderness Area Specific

a. Introduction

Information regarding recreation in the specific national forests and Wilderness areas, which follows, was developed from two primary sources, the Public Lands Information Center (http://www.publiclands.org) and the University of New Mexico Bureau of Business and Economic Research ("BBER").[12] The following provides information regarding recreational activities in the national forests and Wilderness areas, which is enhanced by the rivers, streams and lakes in the area, as well as recreational activities such as fishing directly related to the nominated waters.

Exhibit 35 to this Amended Petition provides excerpts of key information and tables from BBER reports that quantify the direct, indirect and induced financial benefits of various activities on regional and local economies for each national forest.[13] The economic impact of recreation

[12] The Public Lands Information Center was developed by the Public Lands Interpretive Association, a 501(c)(3) not-for profit educational organization whose mission is to inspire and educate the public about the natural and cultural heritage resources of America's public lands, in order to provide a single source of information about recreation and land use on public lands in a state. BBER was established in 1945, and has decades of experience in providing objective and credible demographic and economic information, analysis, and projections to New Mexico businesses, state and local government agencies, and the general public.

[13] These reports are: UNM BBER, Socioeconomic Assessment of the Carson National Forest Submitted to the United States Forest Service Region 3 Office (July 2007) ("BBER Carson Report"); UNM BBER, Socioeconomic Assessment of the Cibola National Forest Submitted to the United States Forest Service Region 3 Office (June 2007) ("BBER Cibola Report"); UNM BBER, Socioeconomic Assessment of the Gila National Forest Submitted to the United States Forest Service Region 3 Office (July 2007) ("BBER Gila Report"); UNM BBER, Socioeconomic Assessment of the Lincoln National Forest Submitted to the United States Forest Service Region 3 Office (July 2007) (BBER Lincoln Report"); Socioeconomic Assessment of the Santa Fe National Forest Submitted to the United States Forest Service Region 3 Office (August 2007) ("BBER Santa Fe Report").

on the local economy can be broken into two areas: direct and indirect and induced impacts. Local direct inputs are a measure of activities and their economic value as they actually occur in the national forest. The direct activities associated with each national forest create indirect and induced impacts as businesses and workers make expenditures and purchases, and these funds cycle through the local economy. The sum of the direct, indirect, and induced expenditures constitutes the total impact the national forest has on the economies of the neighboring communities.[14] This provides general information about the economic impact of recreational activities in the forests; information regarding the economic impact of recreational activities directly tied to the waters nominated is not available.

b. Cibola National Forest

The Apache Kid Wilderness area is located within the Cibola National Forest. The Apache Kid Wilderness was designated by Congress in 1980, and covers 44,626 acres. The Apache Kid Wilderness includes 44,650 acres of rugged canyons and peaks with 68 miles of often primitive trails. Hunting, horseback riding, hiking, and backpacking are activities that are available within the Apache Kid Wilderness. Mule and whitetail deer, elk, black bear, mountain lion, and turkey are common game species. Public Lands Information Center. The center point of the 68 mile trail system in the Apache Kid Wilderness is the trail to the Apache Kid's grave along 13 miles of mountain crest.

Within the Cibola National Forest, in 2004, there were the equivalent of 2,193 full-time annual jobs that directly supply goods and services supported by the local spending of recreation

[14] As explained below, in Section I.K, Economic Impact, economic impact information specific to each Wilderness area is not available. However, economic impact information specific to each national forest, within which each Wilderness area is located, is available through the BBER reports. Therefore, this Amended Petition provides the available economic impact information for each national forest, with the understanding that the economic impact any particular Wilderness area has represents a subset of the information from the national forest.

and wildlife visitors. The direct impacts indicate that visitor spending is by far the largest contributor to economic activity generated by the Cibola National Forest. Visitors and recreation account for $135 million in direct impacts to the local economy. In total, the Cibola National Forest contributes directly or indirectly an estimated 3,454 jobs and $85 million in income to local economies. Recreational spending is by far the largest contributor, accounting for 85% of the jobs and 83% of the labor income, created by forest related activities.

For small communities, the presence of the Cibola National Forest supports the local economy in a number of crucial ways. The substantial recreational spending by visitors is an important source of income and employment in these rural small economy areas. Cibola National Forest is also important as a recreational and cultural site for locals and in contributing to the perceptions of New Mexico that encourage tourism. There are contributions from the forest in terms of scenery and other aesthetic values that further encourage visitors, even if they are not explicitly visiting the region for the forest. BBER Cibola Report.

c. Carson National Forest

Within the Carson National Forest are 86,193 acres of Wilderness. The Wilderness areas are Wheeler Peak, Latir Peak, Cruces Basin, and northern parts of the Chama River Canyon and Pecos Wildernesses. The Carson National Forest features the Sangre de Cristo Mountains, which include Wheeler Peak. At 13,161 feet, it is the highest point in New Mexico. The forest features perennial streams, small lakes, alpine valleys, and meadows. Year-round recreational opportunities including fishing, boating, hunting, hiking, wildlife watching, and cross-country skiing. The land in the Carson National Forest is used mostly for recreation and livestock grazing. Snowfall within the Carson National Forest contributes substantially to the runoff water needed throughout the Rio Grande Valley for agricultural purposes. The forest comprises some

of the most productive and important watersheds in the region. BBER Carson Report.

Hunting takes place in areas ranging from the sub-alpine peaks of the Sangre de Cristo Mountains to the high plains near San Antonio Mountain. BBER Carson Report. One of the most sought after big game species in North America is the Rocky Mountain Bighorn Sheep. Typically, hunts for this species occur at the highest elevations of the Sangre de Cristo Mountains within the two wilderness areas. BBER Carson Report. Elk is the premier big game in the state and is probably the most popular big game hunted on the Carson National Forest. Management of elk on the Carson National Forest goes back to the early 1900's when Rocky Mountain Elk were first introduced into northern New Mexico. Today, the Carson National Forest boasts one of the largest elk herds in the state. BBER Carson Report. Mule deer are one of the most difficult and sought after big game animals in North America. Like most of the western states, Mule deer began to decline in the late 1980's to early 1990's. As a result, management agencies began to manage deer herds in many different ways. On the Carson National Forest, current management practices, such as a limited deer-entry system, has allowed mule deer herds to slightly rebound and stabilize. BBER Carson Report.

The Cruces Basin Wilderness includes 19,000 acres of majestic landscape in northern New Mexico ranging from 10,900 feet along the Brazos Ridge, to 8,500 feet near the Los Pinos River. The Los Pinos River borders the Cruces Basin Wilderness. Located in the northern end of the Carson National Forest, near the Colorado border, this basin drains into the Los Pinos River. The western portion of the Cruces Basin Wilderness follows the Brazos Ridge and the northeast boundary follows the Toltec Gorge. While there are no designated trails in the Cruces Basin Wilderness, hiking can be easy over these upland grasslands, or difficult in forest snags. Cross-country skiing is very popular here. There are many opportunities to see and hunt wildlife

and streams support populations of brook, rainbow, and brown trout. These 18,902 acres contain grass-banked streams, aspen groves and large, open meadows called "parks" fill the rolling hills above 8600 feet. Public Lands Information Center.

The Latir Peak Wilderness is a 20,000 acre area located within the Carson National Forest. Designated in 1980, the Wilderness is composed of dense forest, meadows, and alpine tundra on Latir Mesa in the northern portion of the forest. It includes a portion of the Sangre de Cristo Mountains and contains three of the state's highest peaks: Venado Peak at 12,734 feet, Latir Mesa at 12,692 feet, and Virsylvia Peak at 12,594 feet. The most popular trail is the Lake Fork Trail, which begins at Cabresto Lake and continues for five miles to its source at Heart Lake, at an elevation of 11,520 feet. The trail continues into high alpine mesas and Latir Peak itself. Cabresto Lake is just outside the Wilderness area, but impounds Lake Fork Creek (a nominated water), which is entirely within Wilderness. Bull Creek Trail is also available for hiking, and is less used. Bull Creek is a nominated water. A variety of wildlife hunting opportunities can be found in Latir Peak Wilderness, and fishing is a popular activity in the area's streams. Public Lands Information Center.

The Wheeler Peak Wilderness is south of Latir Peak Wilderness; it is an attractive, easily accessible, and heavily used area, which includes almost 20,000 acres. Lying along the top of the Sangre De Cristo mountain range, Wheeler Peak Wilderness is characterized by high rugged terrain. Elevations range from a low of 7,650 feet to a high of 13,161 feet at Wheeler Peak, the highest point in New Mexico. From the cottonwoods along the Rio Hondo[15] to the Bristlecone pines guarding the peaks, Wheeler Peak Wilderness has almost all of the trees native to Northern New Mexico. Englemann spruce and sub-alpine fir are the predominant tree species. Because

[15] The Rio Hondo borders Wilderness; the South Fork Rio Hondo, a tributary to the Rio Hondo, is nominated.

Wheeler Peak is so high, it is one of the only places in the Southwest to see a true alpine "mat" as opposed to grasses that grow in other high alpine locales. The mat produces beautiful brilliantly colored flowers. Songbirds can be seen almost anywhere. Magpies, gray jays, chickadees, woodpeckers, and numerous other birds can be spotted throughout the wilderness by bird watchers. Public Lands Information Center. Rocky Mountain bighorn sheep, once native to the Wheeler Peak area, were reintroduced in 1993, and can be seen at the highest alpine elevations year-round.

The trail system in the Wheeler Peak Wilderness leads to many peaks and lakes. Hiking to Wheeler Peak is a 16 mile round trip rite of passage for many hikers. The first three miles of the trail lead to Williams Lake (a nominated water), a easy hike that is popular with families. From the summit of Wheeler Peak, hikers can continue on a trail to Horseshoe Lake (a nominated water) or follow the ridge to Simpson Peak and Taos Cone, into Sawmill Park, where hikers can exit the Wilderness on the East Fork of the Red River (a nominated water). Horseshoe Lake and Lost Lake (a nominated water) are stocked occasionally with native Rio Grande cutthroat trout, and Sawmill Creek (a nominated water) supports a native population of this species.

The Pecos Wilderness is referred to as the jewel of the Sangre de Cristo range of the southern Rockies. These 223,333 acres of peaks, forests, lakes, streams and mountain meadows contain the second and third highest peaks in New Mexico. The terrain varies from open meadows in the Pecos River Valley to the steep canyons of the Sangre de Cristo mountain range.

The Pecos River flows out of the Pecos Wilderness through rugged granite canyons and waterfalls, and passes small, high-mountain meadows. The Pecos River in Wilderness is nominated for ONRW status in this Amended Petition. As discussed above, from its origin, the

first 13.5 miles of the Pecos River is designated "wild" in the Wild and Scenic Rivers system. There are 15 lakes and eight major streams to sustain both plant and animal habitat, including the native Rio Grande cutthroat trout. http://www.fs.fed.us/r3/sfe/recreation/wilderness.htm. Three Special Trout waters, Jack's Creek, Rio Valdez and the uppermost reach of the Pecos River, above a 100-foot waterfall, are habitat for wild Rio Grande cutthroat trout, and are open to catch-and-release fishing. The Wilderness offers fly fishing in mountain streams and lakes, and is heavily visited in summer months from the Jack`s Creek/Iron Gate and Aspen Basin trailheads. Public Lands Information Center. Many lakes, more than 130 miles of perennial streams, and a 100-foot waterfall, offer first-rate fishing, where rainbow trout, brown trout, and the Rio Grande cutthroat trout all can be found.

The 250-mile trail system is usually accessed along the Winsor Trail at the Santa Fe ski basin, and from SR 63 along the Pecos River corridor. The most frequently traveled trails are those leading to Beatty's Cabin, Puerto Nambe, Hermits Peak, the high peaks, the lake basins, and even Pecos Falls. BBER Carson Report. The Pecos Wilderness area alone receives approximately 48,000 site visits annually. This high visitation rate results in more than $2.6 million net benefits to the state annually. Berrens, *et al.*, 2006. Wildlife ranges from deer and elk to big horn sheep, turkeys and grouse. The Pecos Wilderness also offers hunting for elk and deer in the high country.

Within the Carson National Forest, recreation and tourism related activities contributed approximately $160 million (not including skiers), accounting for a substantial share of such activities in the area in 2004. In total, the Carson National Forest contributes directly and indirectly an estimated $414 million in output, 4,003 jobs and $89.3 million in income to the local economy. This is equivalent to nearly 9% of the 45,287 jobs in these areas in 2003. Visitor

spending is by far the largest source of activity, contributing a total of 83% of the employment labor income impacts. The most important economic aspect of the use of the Carson National Forest is the revenue generated by recreational visitors. BBER Carson Report.

d. Santa Fe National Forest

The lands that are now the Santa Fe National Forest was designated as the Pecos River Forest Reserve in 1892 and the Jemez Forest Reserve in 1905. In 1915, these reserve areas were combined to form the Santa Fe National Forest. The Santa Fe National Forest contains the San Pedro Parks and Dome Wildernesses, and most of the Pecos and Chama River Canyon Wildernesses. East of the Rio Grande, the southern Sangre de Cristo Mountains cover the Pecos division including the Pecos Wilderness and the 13,101 foot Truchas Peak. Truchas Peak, the second highest peak in New Mexico, provides a challenge for mountain climbers and ecologists who may visit to observe rare species of plants and animals. The Santa Fe National Forest west of the Rio Grande includes the Jemez Mountains, featuring a large volcanic caldera and a ring of mountains surrounding the valley.

The defining features of the San Pedro Parks Wilderness are the large grassy meadows framed by dense stands of spruce and mixed conifer trees. The San Gregorio Lake (a nominated water) is the main body of water in this Wilderness. Various streams cut through the meadows and mountains supporting fishing recreational opportunities. Hiking in the San Pedro Parks Wilderness is a popular summer past time. Public Lands Information Center. Recreational opportunities in the San Pedro Parks Wilderness includes kayaking, canoeing and rafting.

The Dome Wilderness is a 5,200-acre area situated adjacent to Bandelier Wilderness in Bandelier National Monument, the area provides a continuous expanse of primitive canyon-land environments similar to those found within the National Monument. The trail system accessing

the area also provides access into the west side of Bandelier Wilderness with several trailheads located along Forest Road 289. Elevations range from 8,200 feet near St. Peter's Dome to 5,800 feet at the base of Sanchez Canyon/Creek (a nominated water). Public Lands Information Center. St. Peter's Dome Trail is a 6.1 mile hike across Sanchez Canyon/Creek. The Capulin Trail is a two mile hike, ending at the Bandier National Boundary.

The Chama River Canyon Wilderness includes 50,000 acres of rugged canyon terrain with limited trail access and varying river water levels, and is popular for hiking and fishing activities. Though small areas reach into the Carson National Forest, the majority of the Chama River Canyon Wilderness is in the Santa Fe National Forest. As discussed above, a segment of the Rio Chama that flows through the Wilderness has been designated as wild under the WSRA, and its beauty is impressive. The Rio Chama, one of New Mexico's most prized rivers, is a nominated for ONRW status in this Amended Petition. The Chama River Canyon is a spectacular watercourse that flows through the Rio Chama Gorge. The walls of the canyon are a striking variety of colors from yellows to maroons marking the distinct sedimentary layers of rock, which rise up to 1,500 feet. The Rio Chama offers exceptional recreational opportunities for scenic trips, boating, and rafting. Recreation is co-managed by the federal Bureau of Land Management ("BLM") and the Forest Service. Rafting, canoeing, and kayaking have become so popular that the BLM has instituted a lottery system for private permits, although many outfitters conduct whitewater trips, eliminating the permit hurdle for individuals.

Backpackers can hike along portions of the Chama River, and pitch their tents in a secluded wooded campsite above one of the Canyon's high water beaches. Two main trails are most popular as access into the Wilderness. The Hart Trail descends into Chama River Canyon and meets with the Rio Chama. This trail provides a great view of the canyon as well as fishing

opportunities. Trout often flourish in the river. The second most popular trail is a portion of the Continental Divide National Scenic Trail System. Numerous bird species may be spotted in this Wilderness area. Public Lands Information Center.

Within the Santa Fe National Forest, in 2004, there were the equivalent of 1,300 jobs that are directly related to visitors and recreation (not including skiing). The direct impacts from visitors and recreation generate $86 million annually. In total, the Santa Fe National Forest contributes directly or indirectly an estimated 1,600 jobs and $116 million in income to the local economy. The city of Santa Fe is dependent on the forest setting provided by the Santa Fe National Forest that creates the scenic beauty for which the city is famous as a tourist destination. While a larger degree of logging or ranching activity may occur in counties such as Sandoval, San Miguel, or Rio Arriba, Santa Fe County is the primary benefactor of the visitor spending impacts. BBER Santa Fe Report.

e. Lincoln National Forest

Lincoln National Forest has 1.1 million acres of publicly owned land and includes White Mountain Wilderness. The Lincoln National Forest shares borders with the Mescalero Apache tribe, which has historical ties to Lincoln National Forest land and continues to make use of Lincoln National Forest. The higher and cooler elevations of Lincoln National Forest and the fact that the forest is an easy two-hour drive from west Texas communities, such as El Paso and Lubbock, make it an attractive destination for many Texans. In this manner, Lincoln National Forest is a resource that serves to attract many tourists and their money to the surrounding communities. Numerous visitors, especially hunters and wildlife viewers, are attracted by the diversity of wildlife in Lincoln National Forest. The statewide importance of wildlife is illustrated by the fact that almost 600,000 New Mexico residents participated in hunting, fishing,

or wildlife watching during 2001, contributing nearly $1 billion to the State's economy. Many visitors come to hunt, backpack, hike, horseback ride, and otherwise enjoy the vast tracts of relatively undisturbed areas found within the Lincoln National Forest. These areas include the White Mountain Wilderness area. In addition, numerous trails are available for cross-country ski purposes. Visitor spending is the single most important contributor to the economic impact of Lincoln National Forest. BBER Lincoln Report.

The White Mountain Wilderness ranges from desert grasslands to 12,000 feet, and includes Southern New Mexico's highest point, Sierra Blanca Peak. The Wilderness contains a north-south trending ridge and canyon system that forms the divide of the Sacramento Mountains. About 50 miles of easy-to-strenuous trails trace the ridges and canyon bottoms. The White Mountain Wilderness area has a well-developed system of trailheads and trails. The number and distribution of trails provide an almost infinite number of hiking options for everyone. Novices to experts can find hiking opportunities to fulfill their desires. The eastern side of the range provides the primary access points, and is characterized by moderate-sloped, forested canyons and small streams. Public Lands Information Center.

Almost all the paths eventually join the 21-mile-long Crest Trail, which has excellent views. The South fork Trail follows the South Fork Rio Bonito (a nominated water), and crosses the stream numerous times. Water is plentiful in the stream except for the uppermost mile of the trail. The Three Rivers Trail follows the Three Rivers Creek (a nominated water) for approximately five miles to its source. In total, recreation (not including skiing) in the Lincoln National Forest contributed in 2004 directly or indirectly an estimated 1,800 jobs and $82 million in direct impact to local economy. Visitor spending is by far the largest source of activity, contributing a total of 71.4% of the employment and 58.9% of the labor income impacts

of the Lincoln National Forest. BBER Lincoln Report.

f. Gila National Forest

The Gila National Forest includes three Wilderness areas, the Gila, Aldo Leopold, and Blue Range Wildernesses. These Wilderness areas make up about 24% of the total acreage of the Gila National Forest. Recreation is a major use of the Gila National Forest, and the national forest is a well known destination for recreationists. Forest Service data indicate that over one million people visited the Gila National Forest in 1999-2000. Of these, almost 70% came for recreational activities such as hiking, picnicking, and camping, while more than 30% came to go hunting or fishing or to view wildlife. Local visitors make up about 57% of the recreational visitors.

The Gila Wilderness is the state's largest Wilderness area, comprised of 558,000 acres of rugged backcountry criss-crossed with foot and horse trails. The Gila Wilderness is one of America's great wild expanses and, as noted previously, was the nation's first protected Wilderness area.

High mesas, rolling hills, and deep canyons distinguish the eastern portions, as do pinion and juniper woodland and a few grassland areas. Ponderosa pines blanket the central portion, with sheer cliffs outlining the Gila River. The Gila River, one of New Mexico's most popular rivers, is nominated for ONRW status in this Amended Petition. The land is cut deeply by the Gila River as well as the Turkey Creek and Mogollon Creek drainages (both nominated waters). Ten thousand foot peaks of the Mogollon Range are on the west and southwest of the Wilderness area.

Recreational opportunities in the Gila Wilderness include hunting, fly fishing, hiking, horseback riding, wildlife viewing, and opportunities for unlimited solitude, and it is one the best

destinations for backpackers in the country. There is an extensive maintained trail system in the Gila Wilderness. Several books have been written on recreational opportunities in the Gila Wilderness including *Hiking New Mexico's Gila Wilderness* by Polly Cunningham and *The Gila Wilderness: A Hiking Guide* by John A. Murray. There are several hot springs in Gila National Forest, including Middle Fork Hot Springs, Jordan Hot Springs, and Turkey Creek Hot Springs. Public Lands Information Center.

As noted above, portions of Iron Creek and Mogollon Creek are designated as Special Trout Waters by NMDGF and open to fishing for Gila trout on a catch and release basis. Willow, Gilita, and Sapillo Creeks (all nominated waters) are open to fishing for Gila and brown trout. The Gila Wilderness logged 9000 angler days in 2008.

The Blue Range Wilderness includes 29,304 acres with little evidence of human impact. The area is crossed by the Mogollon Rim and deep rugged canyons. New Mexico's Blue Range Wilderness is contiguous with Arizona's Blue Range Primitive Area. Grassland foothills rise to juniper woodland and higher up to peaks forested in ponderosa pine, spruce, and fir. On occasion, the dense woods will give way to a mountain meadow or a cool aspen glade. The rock-walled canyons are narrow and steep, sometimes plummeting as much as 1,000 feet from their forested rims. By contrast, the sweeping reaches of stark land offer tremendous solitude and soul-stretching quiet, a silence broken only visually by ragged rock towers. Hiking opportunities include the WS Mountain Trail, which starts at Pueblo Park Campground, continues along the rugged Pueblo Creek and Bear Creek drainages, and ends in Arizona. The perennial portion of Pueblo Creek is a nominated water in this Amended Petition. The areas recreation opportunities include kayaking, canoeing and rafting as well as hiking, backpacking, horseback riding and wildlife viewing. Public Lands Information Center.

The Aldo Leopold Wilderness straddles the crest of the Black Range and contains the most rugged and wild portion of these mountains. Only Forest Service Road 150 separates it from the even larger Gila Wilderness. The Black Range shoots out in a network of deep canyons and precipitous timbered ridges, rincons, and forested benches. Juniper, pinion pine, and oak dominate up to about 7,000 feet, at which point other pines, fir, spruce, and aspen take over the woodland. Vista points sometimes drop off as much as 1,000 feet to rivers and streams verdantly outlined by cottonwoods, willows, and elders. The Continental Divide cuts across the center ridgeline of the Wilderness, and a 33-mile-plus section (with many miles of trails) of the Continental Divide National Scenic Trail forms a portion of the southern boundary. Forest Service at www.fs.fed.us.

The Mimbres, Diamond, Las Animas, South Diamond, and Black Canyon are among the nominated perennial waters in the Aldo Leopold Wilderness area. As identified previously, the Black Canyon above the fish barrier is a Special Trout Water with wild native Gila trout. New 2010 fishing rules allow unlimited take of rainbow, brown and brook trout above this barrier, and for catch-and-release only for Gila trout.

The principal economic activities on the Gila National Forest include ranching, timber harvesting, recreation and wildlife visits, and Forest Service operations. The direct impacts indicate that visitor spending in 2004 was by far the largest contributor to local economic activity, providing $111 million in output and 2,122 jobs. The comparatively large contribution of recreational and visitor spending is a result of the number of people visiting the Gila National Forest. More than one million parties visited the Gila National Forest in 2001, which indicates a substantial degree of use. BBER Gila Report.

According to the Arrowhead Center at New Mexico State University, agriculture related

industries and fishing related activities are basic industries in Catron County, and account for 90 jobs. According to BBER, special high income activities may not be satisfactorily captured in the above data. For example, outfitters and guides represent a significant amount of economic activity. For hunting outfitters, standard prices range from $600 to $700 per day, often with a multiple day minimum. Customers of these companies are almost exclusively from outside the local region, so they represent an important flow of money into the local economy. BBER Gila Report.

I. Existing Water Quality

1. General

The Commission's Regulations require a petition for ONRW designation include water quality data, if available, to establish a baseline for the proposed ONRW. 20.6.4.9.A(3) NMAC.

The Commission's WQS define water quality goals by designating uses for rivers, streams, lakes and other surface waters; setting criteria to protect those uses; and establishing antidegradation provisions to preserve water quality.

The WQS group surface waters of the state into segments that are geographically- or hydrologically-related within a larger watershed. *See* 20.6.4.97 – 899 NMAC. Generally, all waters in a WQS segment have the same designated uses and criteria to meet those uses. Designated uses include aquatic life and human contact uses. A number of contaminants also have human health criteria.

The NMED Surface Water Quality Bureau monitors these waters on a rotating watershed basis. Individual waters in a WQS segment are broken into one or more Assessment Units ("AU") to facilitate monitoring. For example, WQS segment 503 includes all perennial tributaries to the Gila River above and including Mogollon Creek. *See* 20.6.4.503 NMAC.

Turkey Creek, a tributary to the Gila River, is an AU within WQS segment 503. Small streams and lakes are usually a single assessment unit. Large streams such as the Gila River may consist of several AUs. Monitoring data are assessed to determine whether the water quality in an AU meets the criteria set forth in the WQS and thus supports the designated uses. If any of the designated uses is not supported, the AU is listed as impaired in the State of New Mexico CWA § 303(d) / § 305(b) Integrated Report ("Integrated Report") and the cause(s) of the impairment is identified.[16] NMED has identified 90 AUs within the waters that are nominated for ONRW status in this Amended Petition. Nominated AUs and associated impairments are summarized in Exhibit 33 to this Amended Petition.

For the aquatic life designated use, approximately one-half of the nominated AUs fully support the use, one quarter of the AUs are impaired, and one quarter of the AUs have not been assessed. For the human contact designated use, one quarter of AUs have been assessed and most of these are fully supporting. Most unassessed AUs are remote, high elevation lakes that are difficult to access.

There are no point source or National Pollutant Discharge Elimination System ("NPDES") permitted facilities that discharge directly into waters within Forest Service Wilderness areas in New Mexico. Generally, water quality impairments in headwater streams and Wilderness areas are caused by nonpoint sources relating to land use. *See* Section I.J *infra.*

2. Aquatic Life

Criteria are set for contaminants and conditions that affect the aquatic community. These criteria may be numeric, *e.g.,* 20.6.4.900 NMAC, or narrative, *e.g.,* 20.6.4.13 NMAC. Criteria for dissolved oxygen, temperature, and pH are numeric and vary with the aquatic life use

[16] The most recent Integrated Report is for 2008-2010, and may be found at http://www.nmenv.state.nm.us/swqb/303d-305b/2008-2010.

subcategories. Specific conductance numeric criteria apply only to the high quality coldwater aquatic life use. Numeric criteria also exist for contaminants including metals, organics and radionuclides. General narrative criteria require that sediment and turbidity must not impair the normal growth, function or reproduction of aquatic life.

Nutrients such as nitrogen and phosphorus are necessary for a healthy aquatic community. However, excessive nutrients may cause an overgrowth of plants at the expense of other organisms. Numeric criteria for nitrogen, in the form of ammonia, apply to all waters with an aquatic life use, except waters assigned to the limited aquatic life category. Numeric phosphorus criteria apply only to specific waters. Additionally, general criteria for nutrients apply to all waters.

Aquatic macroinvertebrates are insects often used in assessments as indicators of water quality. Good water quality supports a diverse macroinvertebrate community and the presence of species sensitive to pollution.

The high quality coldwater aquatic life designated use is assigned the most stringent criteria of the aquatic life uses, and is the most frequently impaired use in the nominated AUs. Most of these impairments result from non-attainment of criteria for temperature, turbidity, aluminum, or the biological community.

3. Human Contact

The presence of bacteria, such as E. coli or fecal coliform, affect the health of humans that come into physical contact with the water. Numeric criteria for bacteria apply to the primary contact use (*e.g.*, swimming, wading, ceremonial immersion), and secondary contact use (*e.g.*, boating, fishing). Additionally, numeric criteria for pH apply to the primary contact use. 20.6.4.900.D and -E NMAC.

4. Impairment Tables and Monitoring Data

As stated, a table of the 90 AUs within Wilderness areas for which monitoring data exists is attached as Exhibit 33. The Impairment Tables are organized by basin and identify (1) whether the AU is wholly within Wilderness or not, (2) whether the AU supports the designated use, and (3) if the AU does not support the designated use, the specific impairment. The monitoring data upon which the impairment tables are based is attached as Exhibit 34.

J. Activities That Might Contribute to Reduction of Water Quality

1. General

The Commission's Regulations require a petition include discussion of activities that might contribute to the reduction of water quality in the proposed ONRW. 20.6.4.9.A(4) NMAC. Most Wilderness areas are far removed from industrial, commercial and municipal development, and introduction of contaminants from a point source directly into a Wilderness water body is highly unlikely. As stated previously, there are no NPDES permitted point source discharges directly into any nominated water. Most impacts to Wilderness waters are due to nonpoint sources related to land use in the watershed. Twenty-five nominated waters are currently impaired by bacteria, metals, nutrients, sedimentation, turbidity, low flows, inadequate dissolved oxygen and high water temperatures, as identified in Tables 1 through 9 in Exhibit 34. For water bodies or AUs contained entirely within a Wilderness area, the Integrated Report lists probable sources of impairments as loss of riparian habitat, rangeland grazing (wildlife and livestock), silviculture, fire suppression, and drought. Other existing and potential threats are far-reaching and originate outside Wilderness, such as invasive species, pathogens, airborne contaminants, and climate change.

2. Livestock and wildlife watering

Excessive lingering in the water by large mammals or overgrazing on riparian vegetation can destabilize banks, cause erosion, and increase sedimentation. In addition, bacterial contamination may result from animal waste. Livestock and wildlife watering are default designated uses of all New Mexico waters including wilderness waters. The challenge for land managers is to provide for these uses while protecting the water quality for other uses.

3. Careless or concentrated recreational uses

Camping near a water body can damage riparian vegetation and compact the soil, leading to increased runoff and difficulty reestablishing vegetation. Human and livestock waste can lead to elevated levels of harmful bacteria in the water. User created trails and shortcutting of switchbacks on established trails cause erosion and increased sediment delivery to water bodies. Less obviously, invasive species and pathogens can be moved unintentionally from an infected watershed to an uninfected watershed through horse feed, footwear, and fishing gear.

4. Off-highway vehicles

The number of OHV users in the United States increased from approximately 5 million in 1972 to 51 million in 2004. OHV use in Wilderness and roadless areas is an increasing problem for land management agencies. NMDGF 2006. Unmanaged or illegal OHV use affects wetlands and wildlife habitat, erodes soils, damages cultural resources, and spreads invasive species. Forest Service 2010. OHV users may drive across streams and banks, through wetlands, and along streambeds. As a result, riparian vegetation may be destroyed, increasing erosion and sedimentation, and introducing pollutants directly into the water.

5. Aquatic invasive species

Aquatic invasive species include a variety of plants and animals, such as snals, shellfish,

fungus, protozoans, amphibians, fish or plants. Some transplanted nonnative species do not survive, but others spread rapidly, freed from normal controls such as competitors, predators, and pathogens. Ultimately, they can displace native species and alter the aquatic and riparian ecosystems where they have been established. The New Mexico Aquatic Invasive Species Management Plan describes and prioritizes aquatic invasive species in New Mexico. Over 100 species have been recorded in New Mexico, and many more have been found in neighboring states and have a high potential to invade. Those that may impact Wilderness waters include chytrid fungus (*Batrachochytrium dendrobatidis*), bullfrogs (*Rana catesbeiana*), Asian clams (*Corbicula fluminea*), nonnative crayfish (*Orconectes* spp., *Procambarus* spp.), the alga didymo or rocksnot (*Didymosphenia geminata*), the protozoan parasite that causes whirling disease (*Myxobolus cerebralis*), and the aquatic plant Eurasian watermilfoil (*Myriophyllum spicatum*). NMAISAC 2008.

6. Contaminants

Several nominated waters are listed as impaired by high levels of aluminum. However, more research is needed to determine if aluminum is naturally higher in some watersheds. Other water contaminants are known to be the result of past and present human activities. The Wilderness portion of the Pecos River is impaired by mercury in fish tissue. Mercury, PCBs (polychlorinated biphenyls), and DDT (dichlorodiphenyltrichloroethane) have also been found in fish tissue elsewhere in New Mexico. Consuming contaminated fish may constitute a health risk. NMDGF, *et al.* 2009.

7. High intensity fire

Across much of the Southwest, including the dry forests and woodlands of New Mexico, natural forest fire regime consists of frequent low intensity fires. A history of fire suppression in

concert with excessive grazing has altered the vegetation community structure of some common New Mexico forest types, such as ponderosa pine. Loss of grass or ground cover that historically carried low intensity surface fires, coupled with increased ladder fuels from overgrowth of small trees and excessive fuel loads on the forest floor, create conditions conducive to uncharacteristically severe fires that can devastate watersheds. Loss of vegetative cover and damage to soils increase the quantities of ash and sediment that can wash into streams, suffocating all aquatic life. Even Wilderness areas, if mismanaged in the past, can suffer these effects, as illustrated by the Cerro Grande Fire of 2000 in the Bandelier Wilderness and the Borrego Fire of 2002 in the Pecos Wilderness.

8. Drought and climate change

Aquatic ecosystems in arid regions are at constant risk from drought and human demands for water. Climate change and New Mexico's increasing population may only exacerbate the problem. "Climate change is expected to result in a significant loss of aquatic habitat. Habitat suitable for coldwater fish (*e.g.*, trout) is expected to shrink, with replacement by warmwater fish species. . . . Riparian ecosystems are expected to experience losses and decline, with a reduction in species diversity." NMED/ATWG 2005. Stream conditions will change as snowpack and spring runoff are reduced. Warmer water temperatures have lower dissolved oxygen content, which affects aquatic invertebrates and fish. Native coldwater fish will migrate upstream to any remaining stretches of suitable habitat. OSE/ISC 2006.

9. Protecting water quality

Water quality can be protected by implementing certain practices and regulations. Best Management Practices ("BMP") are structural or nonstructural methods which protect water quality from potential adverse effects of human activities. BMPs are intended to prevent or

reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water. Application of BMPs are required on lands managed by the Forest Service for all activities that have the potential to affect water quality. BMPs accepted by the Forest Service may be found at http://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?2509.22!r3, relevant portions of which are attached as Exhibit 37.

K. Economic Impact

The Commission's WQS provide that the petition include discussion of the economic impact of designation on the local and regional economy within the state and the benefit to the state. 20.6.4.9.A(5) NMAC. The proposed ONRW designation of waters within Forest Service Wilderness areas will have no detrimental economic impact on existing uses within Wilderness areas because there are no new requirements that will apply to existing activities. Therefore, existing economic benefits experienced by the various sectors that rely on the national forests are expected to continue into the future if the waters within Forest Service Wilderness areas are designated as ONRWs.

Under the current WQS, discharges from "preexisting land-use activities" that are controlled by BMPs and do not have new or increased discharges are exempt from any additional requirements as a result of ONRW designation. 20.6.4.8.A(4)(e) NMAC. Petitioners do not propose to alter the protection given to existing uses under the current regulations, but propose to maintain this protection. For example, grazing conducted in an ONRW watershed in accordance with a permit issued by the Forest Service is considered a preexisting land use activity. The Forest Service already requires all grazing permittees to implement BMPs to protect water quality. Therefore, the ONRW designation in Wilderness would not affect the current activities of grazing permittees, and there would be no economic impact on them as a result of the

designation.

While designation is not expected to result in detrimental economic impacts to existing uses, designation will produce benefits to the state. By designating waters within Wilderness areas as ONRWs, the State of New Mexico takes an important step to ensuring protection of headwater streams that ultimately feed downstream public drinking water supplies, agriculture and other important uses. According to the Forest Service, national forest lands provide 14% of the runoff of the contiguous United States land area and the value of this water has been estimated at $3.7 billion per year. USDA - Forest Service 2000. Healthy watersheds filter contaminants from water, and provide other important benefits such as flood control and storm mitigation. These are valuable and irreplaceable services that are generally taken for granted.

As discussed, ONRW designation can help to protect wildlife habitat provided by designated waters. As well, the designation can help to preserve rivers and streams enjoyed by thousands of people annually. Although numbers are not available for recreational and wildlife uses of Wilderness areas alone, the state does derive a significant amount of money from fishing, hunting and wildlife-associated recreation. According to the United State Fish and Wildlife Service 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for New Mexico, 947,000 New Mexico residents and nonresidents 16 years old and older fished, hunted, or watched wildlife in New Mexico. In 2006, state residents and nonresidents spent $823 million on wildlife recreation in New Mexico. Of that total, trip-related expenditures were $430 million and equipment purchases totaled $283 million. Expenditures in 2006 for fishing alone exceeded $300 million.

The current economic impact of national forests on the surrounding local and regional economies has been thoroughly evaluated by BBER. BBER has evaluated each of the five

national forests that the 16 Wilderness areas subject to this proposal are located within: the Carson National Forest, Cibola National Forest, Gila National Forest, Lincoln National Forest and Santa Fe National Forest. *See* UNM BBER, Socioeconomic Assessment of the Carson National Forest Submitted to the United States Forest Service Region 3 Office (July 2007); UNM BBER, Socioeconomic Assessment of the Cibola National Forest Submitted to the United States Forest Service Region 3 Office (June 2007); UNM BBER, Socioeconomic Assessment of the Gila National Forest Submitted to the United States Forest Service Region 3 Office (July 2007); UNM BBER, Socioeconomic Assessment of the Lincoln National Forest Submitted to the United States Forest Service Region 3 Office (July 2007); Socioeconomic Assessment of the Santa Fe National Forest Submitted to the United States Forest Service Region 3 Office (August 2007). The BBER reports describe the socioeconomic impact on forest users, and the impact of each forest on the surrounding local and regional economy. Exhibit 35 to this Amended Petition provides excerpts of key information and tables from the BBER reports that quantify the direct, indirect and induced financial benefits of ranching, timber harvesting, recreation and forest service operations on regional and local economies for each national forest. The BBER reports cover the full range of activities that occur within national forests. Because the nomination is for waters within Wilderness areas only where the range of activities is a subset of those that occur within the entire national forest, the economic benefits of existing activities in Wilderness areas are a subset of the those for the entire national forest. No documentation was available from BBER or the Forest Service regarding economic benefits of Wilderness areas alone.

II. PROPOSED AMENDMENTS TO ANTIDEGRADATION POLICY

A. Background

Federal regulations under the Clean Water Act ("CWA") require states to adopt a

"statewide antidegradation policy" and "methods for implementing such policy . . . . " 40 CFR § 131.12(a); *see also* 40 CFR § 131.6(d) and (f).[17] The requirement to develop an antidegradation policy and implementing methods or procedures is intended to help implement the overall objective of the CWA "to restore and maintain the physical, chemical and biological integrity of the nation's waters." 33 USC § 1251(a). States' antidegradation policy and implementation procedures are subject to EPA review and approval. 40 CFR § 131.6.

Federal regulations establish three levels of protection for surfaces waters, referred to by the United States Environmental Protection Agency ("EPA") as Tier 1, 2 and 3 waters. *See* 40 CFR § 131.12(a)(1)-(3); Water Quality Standards Regulation, 48 Fed. Reg. 51400, 51403 (Nov. 8, 1983). ONRWs receive Tier 3 protection, the highest level of protection.[18] The Commission has established an Antidegradation Policy in Section 20.6.4.8 NMAC and has approved Antidegradation Procedures as part of the CPP.

The Commission last amended Section 20.6.4.8 NMAC in 2007 to allow for "temporary and short-term degradation" of water quality in ONRWs where such degradation would result in the restoration or maintenance of the chemical, physical or biological integrity of the ONRW. *See* 20.6.4.8.A(3) NMAC. EPA, while "supportive" of the 2007 amendments, did not approve them because the state's implementation procedures for Tier 3 waters were not sufficiently detailed. *See* Oct. 23, 2008 ltr. from M. Flores, EPA, to R. Curry, NMED; *see also* CPP, App. 1,

[17] Section 131.6(d) of Part 40 of the Code of Federal Regulations requires states to include in their water quality standards an antidegradation policy consistent with 40 CFR § 131.12. Section 131.6(f) requires states to include information regarding implementation of the policies.

[18] Federal regulations provide:

> Where high quality waters constitute an outstanding National resource, such waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

40 CFR § 131.12(a)(3).

p. 19 (setting for procedures for ONRWs).

B. Proposed Amendments to Antidegradation Policy

1. General

NMED now proposes new amendments to the Antidegradation Policy in 20.6.4.8.A NMAC and proposes more detailed Antidegradation Procedures to implement the Antidegradation Policy. NMED discusses the proposed amendments to the Antidegradation Procedures in Section III, *infra.* In conjunction with the proposed amendments to 20.6.4.8.A NMAC, NMED proposes to amend the definition section in 20.6.4.7 NMAC to reflect amended terms. NMED proposes the amendments to 20.6.4.8 NMAC in order to address comments and concerns from EPA that have arisen from the current regulations and to address comments and concerns from the public that have arisen from Petitioners' proposal to designate waters in Wilderness as ONRWs. NMED proposes to amend the Antidegradation Procedures to implement its proposed amendments to the Antidegradation Policy and to satisfy EPA's concern that the state's implementing procedures were not sufficiently detailed. *See infra* § III.

NMED proposes the following amendments to 20.6.4.7 and 20.6.4.8.A, also set forth in Exhibit 1:

20.6.4.7 NMAC:

. . .

~~**S. "Designated management agency"** means an agency as defined by 40 CFR Section 130.9(d).~~

. . .

SS. "Oversight agency" means a state or federal agency, such as the United States Department of Agriculture Forest Service, that has authority to make land use or resource management decisions where a surface water of the state is located.

20.6.4.8.A NMAC:

. . .

(3) Where waters have been designated by the commission as outstanding national resource waters (ONRWs), water quality shall be maintained and protected.

(a) The department or appropriate oversight agency shall review on a case-by-case basis discharges that may result in temporary and short-term degradation of water quality in an ONRW in accordance with the following:

(i) The degradation shall be limited to the shortest possible time and shall not exceed six months;

(ii) The degradation shall be minimized and controlled by best management practices or in accordance with permit requirements as appropriate. All practical means of minimizing the duration, magnitude, frequency and cumulative effects of degradation shall be utilized; and

(iii) The degradation shall not result in water quality lower than necessary to protect any existing use in the ONRW.

~~**(3)** No degradation shall be allowed in waters designated by the commission as outstanding national resource waters (ONRWs), except as provided in Subparagraphs (a) through (e) of this paragraph.~~

~~**(a)** Temporary and short-term degradation of water quality shall be allowed only when such degradation can be shown to result in restoration or maintenance of the chemical, physical or biological integrity of the ONRW and is consistent with the objectives in 20.6.4.6 NMAC and with the purposes for which the commission designated the ONRW.~~

~~**(b)** Temporary and short-term degradation of water quality that complies with Subparagraph (a) of this paragraph shall be limited to the shortest possible time and last no longer than 12 months, unless approved by the commission.~~

~~**(c)** Temporary and short-term degradation shall only be approved on a case-by-case basis by the commission, the department or a designated management agency as appropriate. Temporary and short-term degradation resulting from applications under 20.6.4.16 NMAC shall be considered and may be approved by the commission. All other temporary and short-term degradation shall be considered and may be approved by the department or by a designated management agency pursuant to a commission-approved memorandum of agreement between the department and the designated management agency. In approving temporary and short-term degradation, the commission, the department or the designated management agency shall consider and minimize the frequency and cumulative effects of such degradation. The approval of temporary and short-term degradation shall not result in permanent degradation of water quality in the ONRW or in water quality lower than necessary to protect existing uses in the ONRW and shall not alter the essential character or special use that makes the water an ONRW.~~

~~**(d)** In implementing activities that may result in temporary and short-term degradation of water quality, all practical means of minimizing such temporary and short-term degradation shall be utilized.~~

~~**(e)**~~**(b)** Preexisting land-use activities allowed by federal or state law prior to designation as an ONRW~~,~~ and controlled by best management practices ~~(BMPs),~~ shall be allowed to continue so long as there are no new or increased discharges resulting from the activity after designation of the ONRW.

(4) Activities that may result in degradation may be allowed in surface waters of the state when such activities will result in restoration or maintenance of the chemical, physical or biological integrity of the water.

(a) The department or appropriate oversight agency shall review on a case-

by-case basis discharges that may result in degradation referred to in Paragraph (4) above in accordance with the following:

(i) The degradation shall be limited to the shortest possible time;

(ii) The degradation shall be minimized and controlled by best management practices or in accordance with permit requirements as appropriate. All practical means of minimizing the duration, magnitude, frequency and cumulative effects of degradation shall be utilized; and

(iii) The degradation shall not result in water quality lower than necessary to protect any existing use of the surface water.

2. Proposed Amendments to 20.6.4.A(4) NMAC

NMED proposes to add a new provision, Paragraph (4), to Section 20.6.4.8.A NMAC to address degradation that may occur as a result of "activities [that] will result in restoration or maintenance of the chemical, physical or biological integrity" of surface waters, or watershed restoration and remediation projects. Existing Paragraph (3) of Section 20.6.4.8.A NMAC presently addresses degradation that may result from watershed projects, but applies only to ONRWs, not to all surface waters. Existing Paragraph (3) also presently addresses the circumstances under which "temporary and short-term degradation" to ONRWs is permitted. New Paragraph (4) would apply only to watershed projects, and would apply to all surface waters while NMED proposes to amend existing Paragraph (3) to apply only to "temporary and short-term degradation" in ONRWs.

NMED proposes this approach in order to respond to EPA's concern that the state's current approach in 20.6.4.8.A(3) NMAC -- of addressing both watershed restoration projects and temporary and short-term degradation in a single provision and only addressing such activities in ONRWs -- is problematic. *See* Aug. 31, 2009 ltr. from J. Watson, EPA, to M. Leavitt, NMED. EPA suggested that the state's Antidegradation Policy should differentiate between watershed-scale longer-term restoration activities and localized temporary and short-term degradation activities. *Id.* EPA also suggested that provisions relating to watershed

projects should apply to all surface waters, not just ONRWs. *Id.* New Paragraph (4) responds to EPA's comments, and would allow for degradation that might occur as a result of longer-term watershed projects intended to improve water quality over time, and would apply to all surface waters.

A typical watershed restoration project may include removal of non-native vegetation and reestablishment of the native riparian ecosystem. For many of these watershed restoration projects, there is a period of time during which sediment and turbidity increase because native vegetation not yet been established. As NMED testified in the 2007 hearing before the Commission, this period of time can extend beyond a year, and may even last a number of years. While NMED's proposed language allows for watershed projects that may result in water quality degradation for a period of time, NMED's proposes to build in protections to ensure that any such degradation is minimized to the maximum extent possible. NMED proposes to require that the degradation be limited to the shortest amount of time; be controlled by best management practices to minimize the duration, magnitude, frequency and cumulative effects of the degradation; and not result in water quality lower than necessary to protect any existing use in the surface water. *See* Proposed 20.6.4.8.A(3)(a)(i) – (iii) NMAC. NMED's proposal, therefore, would allow watershed restoration and remediation projects to go forward, acknowledges that some degradation of water quality may occur while the project is being established, but builds in protections to safeguard against unnecessary lowering of water quality during implementation of the project.

3. Proposed Amendments to 20.6.8.A(3) NMAC

As discussed above, existing Paragraph (3) of Section 20.6.4.8.A NMAC addresses temporary and short-term degradation to an ONRW resulting from watershed restoration and

remediation projects. NMED proposes to amend Paragraph (3) to address temporary and short-term degradation to an ONRW resulting from projects other than watershed restoration and remediation projects. Temporary and short-term degradation to ONRWs was addressed by EPA in a preamble to its promulgation of water quality standards regulations, 40 CFR Part 131. *See* 48 Fed. Reg. at 51403. In the preamble, EPA explained that its regulations allow for "limited activities which result in temporary and short-term changes in water quality" in ONRWs. *Id.*[19] EPA, also, has provided some, limited guidance to states on the circumstances under which temporary and short-term degradation to an ONRW is permissible. *See* Water Quality Standards Handbook ("WQS Handbook"), § 4.7 (EPA 1983).[20]

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[19] EPA stated:

> [Section] 131.12(a)(3) [of Title 40 of the Code of Federal Regulations] dealing with the designation of outstanding National resource waters (ONRW) was changed to provide a limited exception to the absolute "no degradation" requirement. EPA was concerned that waters which properly could have been designated as ONRW were not being so designated because of the flat no degradation provision, and therefore were not being given special protection. The no degradation provision was sometimes interpreted as prohibiting any activity (including temporary or short-term) from being conducted. States may allow some limited activities which result in temporary and short-term changes in water quality. Such activities are considered to be consistent with the intent and purpose of an ONRW. Therefore, EPA has rewritten the provision to read ". . . that water quality shall be maintained and protected," and removed the phrase "No degradation shall be allowed . . . ."

48 Fed. Reg. at 51403.

[20] EPA states, in part:

> [Section 131.12(a)(3)] requires water quality to be maintained and protected in ONRWs. EPA interprets this provision to mean no new or increased discharges to ONRWs and no new or increased discharge to tributaries to ONRWs that would result in lower water quality in the ONRWs. The only exception to this prohibition, as discussed in the preamble to the Water Quality Standards Regulation (48 F.R. 51402). permits States to allow some limited activities that result in temporary and short-term changes in the water quality of ONRW. Such activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. It is difficult to give an exact definition of "temporary" and "short-term" because of the variety of activities that might be considered. However, in rather broad terms, EPA's view of temporary is weeks and months. not years. The intent of EPA's provision clearly is to limit water quality degradation to the shortest possible time. If a construction activity is involved, for example, temporary is defined as the length of time necessary to construct the facility and make it operational. During any period of time when, after

As a result of EPA's comments, NMED proposes to amend Paragraph (3) of 20.6.4.8.A NMAC to apply to temporary and short-term degradation to ONRWs, and not to require that such degradation be the result of watershed restoration activities, as is presently the case. Deleting this requirement not only responds to EPA's concerns, but to concerns from the Forest Service and a water association that certain projects that were necessary, such as replacement or repair of aging infrastructure and roads, but that were not watershed restoration projects could not be undertaken. NMED's proposal allows such projects to go forward, but builds in protections to ensure that water quality is not unnecessarily impaired. NMED proposes to limit that any such degradation be limited to the shortest amount of time, not to exceed six months; be controlled by best management practices to minimize the duration, magnitude, frequency and cumulative effects of the degradation; and not result in water quality lower than necessary to protect any existing use in the ONRW. Proposed 20.6.4.8.A(3)(a)(i) – (iii) NMAC. Given the protections proposed by NMED in this amendment, allowing a broader spectrum of projects to go forward, sufficiently protects water quality in ONRWs.

NMED's proposal is consistent with EPA guidance that temporary and short-term degradation be limited to "weeks and months, not years." WQS Handbook, § 4.7. The existing regulations allow the degradation to last no longer than 12 months, unless a longer time is approved by the Commission. 20.6.4.8.A(3)(b) NMAC. EPA, however, expressed concern that this provision could result in impacts to water quality persisting longer than necessary. April 9, 2007 ltr. from J. Watson, EPA, to M. Leavitt, NMED. NMED's proposal, limiting degradation

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> opportunity for public participation in the decision, the State allows temporary degradation, all practical means of minimizing such degradation shall be implemented.

WQS Handbook, § 4.7.

to six months, addresses that concern.

NMED proposes to maintain the provision in this section that protects "preexisting land-use activities" so long as those activities are controlled by BMPs and no new or increased discharges occur after designation of an ONRW. *See* 20.6.4.8.A(3)(e) NMAC and Proposed 20.6.4.8.A(3)(b) NMAC. This provision was promulgated by the Commission in 2007 in order to ensure that existing uses, such as grazing permits, were not disturbed and in fact were exempted from more stringent ONRW requirements as long as BMPs were employed and increased discharges did not result. Presently, preexisting activities on Forest Service land such as grazing are subject to BMPs. Therefore, the practices presently employed by existing uses on Forest Service land in Wilderness should not have to change as a result of the ONRW designation sought by Petitioners in this Petition.

4. Proposed Amendments Regarding Oversight Agencies

Under NMED's proposal, decisions to allow watershed projects in any surface water or to allow temporary and short-term degradation in an ONRW would continue to be approved on a case-by-case basis by the government agency that has control over land use decisions where an ONRW is located. NMED, however, proposes to redefine these government agencies from "designated management agencies" to "oversight agencies." *See* Proposed 20.6.4.7.SS NMAC. EPA had expressed concern that reference to "designated management agency" as defined by 40 CFR § 130.9(d) was not a correct use of that term as used in the federal regulation. April 7, 2007 ltr. from J. Watson, EPA, to M. Leavitt, NMED. NMED proposes to use the term "oversight agency" instead.

NMED also proposes to allow oversight agencies to make decisions regarding watershed projects or temporary and short-term degradation in ONRWs without requiring the oversight

agency to enter into a Commission-approved memorandum of understanding ("MOU") with NMED, as is now required. *See* 20.6.4.8.A(3)(c) NMAC. Any decision by an oversight agency to allow a project to go forward, however, would have to comply with the protections proposed in 20.6.4.8.A(3)(a)(i) – (iii) NMAC and 20.6.4.8.A(4)(a)(i) – (iii) NMAC. Setting forth the requirements for oversight agencies up front rather than requiring each oversight agency to negotiate its own MOU with NMED establishes for the public and the oversight agency clear expectations as to the circumstances under which projects may proceed. Setting forth the requirements up front also ensures consistency in the procedures that will be followed by oversight agencies. In addition, eliminating the MOU requirement reduces the burden on NMED, the oversight agency and the Commission to negotiate and oversee agency-specific MOUs. Finally, NMED requests the Commission in this Petition to amend the Antidegradation Procedures in order to provide more detailed procedures for the oversight agency's decision-making, adding further protection. Amendments to the Antidegradation Procedures are discussed in more detail in Section III of the Petition. All of the MOU provisions recommended by NMED during the 2007 hearing before the Commission are included as requirements for oversight agencies in the proposed Antidegradation Procedures.

III. PROPOSED AMENDMENTS TO ANTIDEGRADATION PROCEDURES

As explained in the prior section, federal regulations promulgated under the CWA require each state to develop procedures to implement its antidegradation policy. New Mexico's Antidegradation Procedures are attached as Appendix I to the CPP, which was last approved by the Commission in December 2004. New Mexico's Antidegradation Procedures apply to point source discharges regulated through a permit issued under the CWA, such as a National Pollutant Discharge Elimination System permit or NPDES permit. The Antidegradation Procedures do not

apply to nonpoint source discharges. The procedures for nonpoint source discharges to ONRWs are proposed to be addressed in a new document, the Nonpoint Source Guidance, proposed in this Petition by NMED and addressed in Section IV below.[21] In crafting the proposed amendments to the Antidegradation Procedures, NMED has taken into consideration comments from the Forest Service and forest users, such as grazing permittees and acequia users, and has tried to address all concerns while also trying to ensure that the Antidegradation Procedures meet all water quality standard requirements.

Amendments to the Antidegradation Procedures proposed by NMED would implement NMED's proposed amendments to 20.6.4.8(A)(3), governing for temporary and short-term degradation of ONRWs, and 20.6.4.8(A)(4) NMAC, governing for degradation for watershed restoration projects in surface waters. NMED's proposed amendments to the Antidegradation Procedures are attached as Exhibit 2.

NMED's proposed amendments to the Antidegradation Procedures track NMED's proposed amendments to 20.6.4.8.A(3) NMAC and EPA guidance in its WQS Handbook, allowing temporary and short-term degradation in ONRWs only in limited circumstances. In addition to the requirements proposed by NMED in 20.6.4.8.A(3) NMAC, NMED proposes to include provisions that allow for approval of construction and road building activities only during the period of construction and making the facility or road operational; that require reseeding of areas that need revegetation with native plants; revegetating at the earliest possible time but not later than the first full growing season; and that require NMED notification to the New Mexico Energy, Minerals and Natural Resources Department Mining and Minerals Division ("MMD") that mining activities that have the potential to impact an ONRW are not

[21] While the state's Antidegradation Procedures are subject to EPA approval because they address permitted or point source discharges, the Nonpoint Source Guidance is not subject to EPA approval.

considered "minimal impact" activities. *See* Proposed Antidegradation Procedures, § IV.2. In addition to the requirements proposed by NMED in 20.6.4.8.A(4) NMAC, relating to watershed restoration projects near ONRWs, NMED proposes in the Antidegradation Procedures that NMED may require in-stream monitoring for projects where degradation lasts longer than 6 months to ensure that water quality is sufficient to protect existing uses and that water quality is restored upon completion of the activity. *Id.* § IV.3. NMED proposes to amend the Antidegradation Procedures to include additional protections for ONRWs including monitoring of the discharge to ensure that no pollutant load is added to the ONRW; evaluation of discharges upstream of an ONRW to ensure the discharge will not lower water quality in an ONRW; activity-specific state certifications for NPDES and Dredge or Fill permits; requiring that discharges to ONRW waters that are impaired to be fully controlled; and providing that a ground water discharge permit not be issued if it will violation the Antidegradation Policy. *Id.* § IV.4.

IV. ISSUANCE OF NONPOINT SOURCE GUIDANCE FOR ONRWS

NMED proposes that the Commission approve a new guidance document, entitled "Guidance for Nonpoint Source Discharges in Areas Designated as Outstanding National Resource Waters," attached as Exhibit 3. The Nonpoint Source Guidance is intended to provide guidelines for NMED and oversight agencies to implement the Antidegradation Policy as it applies to nonpoint source discharges in ONRW areas. In crafting the Nonpoint Source Guidance, NMED has taken into consideration comments from the Forest Service and forest users, such as grazing permittees and acequia users, and has tried to address all concerns while also ensuring that the Guidance meets all water quality standard requirements. If approved by the Commission, the Nonpoint Source Guidance will be added as Appendix F to the New Mexico Nonpoint Source Management Plan ("NPS Management Plan"), a document approved

by the Commission in 2009.[22] The vast majority of surface water quality impairments identified in New Mexico are due to nonpoint sources of water pollution. The Nonpoint Source Guidance addresses temporary and short-term degradation, new activities in ONRW areas that may affect water quality, the role of the oversight agencies in approving activities that may impact ONRWs, watershed restoration projects, and existing land uses. In addition to the requirements already set forth in proposed amendments to 20.6.4.8.A(3) and (4) NMAC, key elements of the Nonpoint Source Guidance proposed are:

1. Requires that nonpoint sources shall be minimized and controlled by implementing BMPs. BMPs are identified in the NPS Management Plan and the Forest Service Handbook. Relevant portions relating to BMPs of the NPS Management Plan are attached as Exhibit 36 and of the Forest Service Handbook as Exhibit 37.

2. Oversight agencies, such as the Forest Service, must ensure that actions it takes will not result in violations of Commission's Water Quality Standards.

3. NMED and oversight agencies must coordinate with each other, and NMED will not duplicate the review and authorization activities of oversight agencies.

4. Oversight agencies must provide notice to NMED of projects that have the potential to degrade water quality in ONRWs; give NMED an opportunity to participate in the planning phases of such projects; establish a program for implementing BMPs; establish a program to monitor and evaluate projects; and establish a process to evaluate projects on a case-by-case basis.

5. NMED or the oversight agency may require monitoring by the discharger of watershed restoration projects that result in degradation lasting longer than 6 months. BMPs

[22] The full NPS Management Plan may be found at ftp://ftp.nmenv.state.nm.us/www/swqb/WPS/NPSPlan/WQCC-Approved2009NPSPlan.pdf.

may be revised or augmented based on monitoring data.

6. Preexisting land use activities, authorized by state or federal law prior to ONRW designation, are not subject to new requirements as a result of ONRW designation so long as the discharge is controlled by BMPs. Grazing and other forest uses conducted in an ONRW watershed in accordance with a permit issued by the oversight agency prior to designation are considered preexisting land use activities.

7. Water quality impacts associated with acequia maintenance, repair and improvements are generally *de mimimus*, and therefore such activities are generally exempt from the ONRW requirements. Similarly, acequia operation is exempt from the requirements. In both cases, implementation of BMPs is encouraged.

8. Temporary and short-term degradation associated with construction or road building activities shall last no longer than the length of time necessary to construct the facility or road and make it operational. Such activities shall incorporate BMPs to minimize pollution.

Conclusion

Based on the foregoing, Petitioners respectfully request the Commission to grant this Amended Petition *in toto*, including designating all perennial surface waters located with Forest Service Wilderness as ONRWs.

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Certificate of Service

I certify that a copy of the foregoing pleading was mailed on May 17, 2010 to Daniel R. Dolan, Dolan & Associates, PC, 5801 Osuna road NE, # 106, Albuquerque, New Mexico 87109-2587.

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REFERENCES

Agency Technical Work Group (ATWG). December 30, 2005. *Potential effects of climate change on New Mexico.*

American Rivers. 2008. Gila among America's Most Endangered Rivers. Online at http://www.americanrivers.org/site/DocServer/Gila_FINAL.pdf?docID=7526.

Berrens, R., J. Talberth, J. Thatcher and M. Hand. September 2006. *Economic and Community Benefits of Protecting New Mexico's Inventoried Roadless Areas*. Santa Fe, New Mexico.

Dahl, T.E. 1990. Wetlands losses in the United States, 1780s to 1980s. US Fish and Wildlife Service, Washington, D.C. 21 pp.

Davis, J, *et al.*. Jan. 2001. Monitoring Wilderness Stream Ecosystems. US. Dept. of Agriculture Forest Service Rocky Mountain Research Station, General Technical Report RMRS-GTR-70.

DeBano, L.F. and P.F. Ffolliott. 1995. The Sky Island conference: Looking back, looking ahead. *In:* DeBano, L.F., Gottfried, G.J., Hamre, R.H., Edminster, C.B., Ffolliott, P.F., Ortega-Rubio, A., comps. Biodiversity and Management of the Madrean Archipelago: The Sky Islands of Southwestern US and Northwestern Mexcio. US Department of Agriculture Forest Service Rocky Mountain Research Station General Technical Report, RM-GTR-264: 1-5.

Degenhardt, W.G., C.W. Painter, A.H. Price. 1996. Amphibians and Reptiles of New Mexico. University of New Mexico Press, Albuquerque, New Mexico, USA. 431 pp.

Forest Service Manual (FSM). 1997. http://www.fs.fed.us/im/directives/dughtml/fsm.html.

Henrickson, J. and M.C. Johnston. 1986. Vegetation and community types of the ChihuahuanDesert. Pages 20-39 in J.C. Barlow, A.M. Powell, and B.N. Timmermann (eds.), Second Symposium on Resources of the Chihuahuan Desert Region, United States and Mexico, Chihuahuan Desert Research Institute, Alpine Texas.

Grahame, J.D. and T.D. Sisk. 2002. Biotic Communities of the Colorado Plateau: Endangered Fish on the Colorado Plateau. Canyons cultures and environmental change: An introduction into landuse history of the Colorado Plateau. www.cpluhna.nau.edu

Groves, C.R., D.B. Jensen, L.L. Valutis, K.H. Redford, M.L. Shaffer, J.M. Scott, J.V. Baumgartner, J.V. Higgins, M.W. Beck, and M.G. Anderson. 2002. Planning for Biodiversity Conservation: Putting Conservation Science into Practice. BioScience 52: 499–512.

Melquist, W.E. and A.E. Dronkert. 1987. River otter. Pp. 626-641 in M. Novak, J.A. Baker, M.E. Obbard, and B. Malloch, (eds.) Wild Furbearer Management and conservation in North

America. Ontario Ministry of Natural Resources, Toronto Canada. 150 pp.

Metcalf, Artie L. and Richard A. Smartt. 1997. Land Snails of New Mexico. New Mexico Museum of Natural History and Science. Bulletin 10. University of Texas at El Paso and The New Mexico Musuem of Natural History and Science, Albuquerque, New Mexico.

National Park Service, National Center for Recreation and Conservation, National Rivers Inventory. http://www.nps.gov/ncrc/programs/rtca/nri/.

Neary, D.G., P.F. Ffolliott, L.F. DeBano. 2005. Hydrology, ecology, and management of riparian areas in the Madrean Archipelago. *In:* Gottfried, Gerald J.; Gebow, Brooke S.; Eskew, Lane G.; Edminster, Carleton B., comps. Connecting mountain islands and desert seas: biodiversity and management of the Madrean Archipelago II. Proc. RMRS-P-36. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 316-319.

New Mexico Aquatic Invasive Species Advisory Council (NMAISAC). October 2008. *New Mexico Aquatic Invasive Species Management Plan.* http://www.wildlife.state.nm.us/documents/NMAISMgmt%20Plan_Final_Oct_08.pdf.

New Mexico Department of Game and Fish (NMDGF). 2006a. Comprehensive Wildlife Conservation Strategy for New Mexico. New Mexico Department of Game and Fish, Santa Fe, New Mexico. 526 pp.

New Mexico Department of Game and Fish (NMDGF). 2006b. Feasibility study: Potential for introduction of river otters in New Mexico. New Mexico Department of Game and Fish, Conservation Services Division, Santa Fe, NM.

New Mexico Department of Game and Fish. 2006c. *Wildlife, Habitat and Hunting: New Mexico's Roadless Areas*. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

New Mexico Department of Game and Fish (NMDGF) 2008a. New Mexico Fishing Rules and Information. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

New Mexico Department of Game and Fish (NMDGF). 2008b. Threatened and Endangered Species of New Mexico: Biennial Review and Recommendations. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

New Mexico Department of Game and Fish (NMDGF). 2008c. Biota Information System of New Mexico (BISON-M): Sangre de Cristo peaclam. Online at: http://www.bison-m.org/booklet.aspx?id=060140#ref_1.

New Mexico Department of Game and Fish, New Mexico Department of Health, New Mexico Environment Department. *New Mexico Fish Consumption Advisories, February 2009.* Found at

http://www.nmenv.state.nm.us/swqb/advisories/.

New Mexico Department of Game and Fish (NMDGF). 2009. *Angler Satisfaction Survey, April 2009*. http://www.wildlife.state.nm.us/recreation/fishing/documents/ AnglerSatisfactionSurvery-2009.pdf.

New Mexico Endemic Salamander Team. 2000. Cooperative management plan for the Jemez Mountain salamander (*Plethedon neomexicanus*) on lands administered by the Forest Service.

New Mexico Environment Department/Surface Water Quality Board. 2007. 2006-2008 State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Report. New Mexico Water Quality Control Commission, Santa Fe, NM.

New Mexico Environment Department/Surface Water Quality Bureau (NMED/SWQB). 2008. *2008-2010 Clean Water Act §303(d)/§305(b) Integrated Report.*

New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. http://nmrareplants.unm.edu (Latest update: 04 September 2009).

New Mexico Office of the State Engineer/Interstate Stream Commission (OSE/ISC). July 2006. *The impact of climate change on New Mexico's water supply and ability to manage water resources.*

Paroz, Y.M. and D.L. Propst. 2007. Distribution of spikedace, loach minnow, and chub species in the Gila River basin, New Mexico 1908-2007. New Mexico Department of Game and Fish, Conservation Services Division.

Pierce, L.J.S. 2006. Boreal toad (*Bufo boreas boreas*) recovery plan. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Pierce, L.J.S. 2007. Narrow-headed garter snake *(Thamnophis rufipunctatus)* recovery plan. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Pritchard, V.L. and D.E. Cowley. (2006). Rio Grande Cutthroat Trout (Oncorhynchus clarkii virginalis): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: http://www.fs.fed.us/r2/projects/scp/assessments/riograndecutthroattrout.pdf.

Rinne, J.N. 1995. Rio Grande cutthroat trout. *In:* Conservation assessment for inland cutthroat trout. M.K. Young, ed. FOREST SERVICE General Technical Report RM-GTR 256.

US Department of Agriculture Forest Service. 2004. Landscape Scale Assessment for the Pecos River Headwaters Watershed, Continuing Education in Ecosystem Management,, 10th year

(CEEM X).

US Fish and Wildlife Service. 1991a. Spikedace (*Meda fulgida*) recovery plan. US Fish and Wildlife Service, Phoenix, AZ.

US Fish and Wildlife Service. 1991b. Loach Minnow (*Tiaroga cobitis*) recovery plan. US Fish and Wildlife Service, Phoenix, AZ.

US Fish and Wildlife Service. 1993. Gila trout (*Oncorhynchus gilae*) recovery plan. US Fish and Wildlife Service, Albuquerque, NM.

US Fish and Wildlife Service. 1995. Recovery plan for the Mexican spotted owl: Vol.1. Albuquerque, New Mexico. l72pp

US Fish and Wildlife Service. 1988. Recovery plan for Zuni fleabane (*Erigeron rhizomatus* Conquist). US Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2002. Holy Ghost Ipomopsis (Ipomopsis sancti-spiritus) Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 51 pp.

US Fish and Wildlife Service. 2006. Blue Range Wolf Recovery Project. Online at: http://www.fws.gov/southwest/es/mexicanwolf/BRWRP_home.shtml.

US Fish and Wildlife Service. 2009. All Listed and Sensitive Species in New Mexico. Available online at http://www.fws.gov/southwest/es/NewMexico/SBC_view_all.cfm.

Warren, M.L. and Burr, B.M. 1994. Status of freshwater fishes of the United States: Overview of an imperiled fauna. Fisheries 19: 6-18.

Whigham, D.F. 1999. Ecological issues related to wetland preservation, restoration, creation, and assessment. The Science of the Total Environment 240: 31-40.

USGS National Gap Analysis Program. 2004. Provisional Digital Land Cover Map for the Southwestern United States. Version 1.0. RS/GIS Laboratory, College of Natural Resources, Utah State University. Online at: http://earth.gis.usu.edu/swgap/landcover.html.