DOE/ET/27241--T7

M+R
27241
8.1

J.M. Energy Consultants, Inc.

Report No. 1021

MASTER

DOE/ET/27241--T7

DE82 008497

TRACKING FEDERAL LAND MANAGEMENT: REPORT NO. 3 ON FEDERAL LAND MANAGEMENT ACTIONS IMPACTING GEOTHERMAL COMMERCIALIZATION AT SELECTED TARGET PROSPECTS IN THE FIVE PACIFIC RIM STATES

May 20, 1980

Prepared For The Division of Geothermal Resource Management, Ass't. Secretary For Resource Applications, U.S. Department of Energy Pursuant To D.O.E. Contract No. DE-AC03-79-ET-27241

DISCLAIMER

DOE/ET/27241--T7

TABLE OF CONTENTS

CHAPTER ONE: GENERIC LAND MANAGEMENT ACTIONS AFFECTING GEOTHERMAL COMMERCIALIZATION IN PACIFIC RIM STATES

(A) EPA/DOI List Of Mandatory "Class I" Areas On The Public Domain Where "Visibility" Is An Important Value:

The Environmental Protection Agency and the U.S. Department of Interior have recently issued, seriatim, their final lists of those mandatory "Class I" air quality areas on the public domain in which "visibility" is an important value. These actions were required by the 1977 Amendments to the Clean Air Act.[1/] That extensive 1977 statute introduced into the Federal air quality regulatory program both the "tiered" concept of air quality "area designations" (Class I, Class II and Class III)[2/] as well as the Congressional directive that E.P.A. undertake "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas."[3/]

As far as those "mandatory Class I Federal areas" are concerned, they include "all international parks, all national wilderness areas and memorial parks which exceed 5,000 acres in size and all national parks which exceed 6,000 acres in size."[4/] The scope of these areas was limited to those already in existence on the date of the enactment of the 1977 Clean Air Act (C.A.A.) Amendments and none of those listed may be redesignated.[5/] The "Class" air quality area designations allow for minimal additional pollution. In Class I, e.g., the incremental "limit" is

roughly the level of the primary National Ambient Air Quality Standards (N.A.A.Q.S.) only.[6] Thus a Class I air quality designation in any area is a severe barrier to geothermal commercialization in that region. If the allowable "increment" is already used up, that's it. This is true even if the area's natural emissions have used it up.

In addition to the "mandatory" Class I areas we have noted, the states, Indian tribes and Federal Land Managers may all "redesignate" any area as Class I by following certain statutorily-specified procedures.[7] At least one Tribe, the Northern Cheyenne, has already redesignated their entire Montana reservation as Class I. For our purposes, the procedures set out for redesignation by Federal Land Managers[8] are of particular interest.

The 1977 C.A.A. directs Federal Land Manager's to "review all national monuments, primitive areas, and national preserves, and . . . recommend any appropriate areas for redesignation as Class I where air quality related values are important attributes of the area."[9]

In addition, to Class I many other Federal lands are restricted. They may not be in "redesignated" below Class II, (where the "increment" is equal to the secondary N.A.A.Q.S. Standards).[10] These include all "national monuments, primitive areas, recreation areas, parks and wilderness areas larger than 10,000 acres."[11]

Thus the much-ballyhoed "wilderness reviews" now being undertaken by BLM and the Forest Service are not the only "land use" planning-type "inventories" presently confronting geothermal commercialization on the Federal lands. In fact, the authority of Federal Land Managers to "redesignate" Federal lands as Class I or II for air quality purposes represents a policy convergance of land use planning and so-called "environmental protection" functions and a clear and present danger to geothermal commercialization's future. That impact is increased exponentially when the E.P.A. requirement for "visibility protection" in most of the "mandatory Class I areas" established by the 1977 C.A.A. is added to the mix.

We have already reviewed the severe limitations on new air pollution that attach to the designation of a Class I or Class II area on the Federal lands. Many of these areas, of course, are already off limits to geothermal leasing themselves. The Geothermal Steam Act of 1970 already bars leasing in national parks, monuments and recreation areas.[12/] The Wilderness Act of 1964 bars "mineral leasing" in any wilderness areas after Dec. 31, 1983[13/] and BLM and Forest Service regulations governing "wilderness study areas" make leasing therein strictly a "no win" proposition.[14/]

But the addition of a "no-leasing-to-protect-air-quality" belt, or "halo" area, around the already foregone lands means, in effect, that the zone of "no geothermal development" established by Congress in the Steam Act is being extended well beyond the

boundaries of the particular Federal lands listed therein. The impact is analogous to that of the proposed "Burton Amendment" to the Steam Act, where areas "in proximity" to certain national parks would also be off limits to geothermal leasing.

To no one's surprise, both D.O.I. and E.P.A. found that virtually all of the 158 "mandatory Class I Federal areas" were of such a nature that "visibility is an important value."[15/] The four "criteria" that they used in coming to this conclusion are as follows:

(1) "Does the legislation for the area indicate that scenic value was an important consideration for establishing the area?;

(2) Are scenic values of the area primarily in the form of panoramic background, intermediate or foreground views?;

(3) Do natural sources of visibility impairment seriously affect the ability of the public to appreciate visibility as an important value?;

(4) For those areas . . . [satisfying (3)], is the magnitude of scenic value sufficient to warrant protection from man-caused sources?"[16/]

As measured against these guidelines, only Rainbow Lake, Wisconsin and Bradwell Bay, Florida "were shown not to have visibility as an important value."[17/] In this respect, E.P.A.'s list is identical to D.O.I.'s.[18/] The E.P.A. will now establish

regulations for the protection of the "visibility" values in the 156 areas it originally selected in February, 1979.[19/] Just what the impact of those regulations will be upon geothermal commercialization is impossible to assess. As E.P.A. put it in issuing its final list of areas, such an assessment at this time "is neither possible nor required by law."[20/] A list of the "Class I-plus visibility" areas in the five Pacific Rim states follows.* The total acreage involved exceeds 103 million acres.

(B) The "Gulf Oil v. Ventura County" Decision of The U.S. Supreme Court: Will Geothermal Reign Supreme?

In our April, 1980 "Monitoring Report" on the State of California we discussed briefly the impending legal conflict over the respective spheres of local (county) and Federal regulatory jurisdiction with respect to the so-called "mineral severed" lands.[21/] As noted there, it appears that Lake County in particular will attempt to assert well siting jurisdiction on those parcels within its boundaries whose mineral estate (subsurface) was leased by B.L.M. for geothermal development in November, 1978 and on which commercialization is imminent. This, in the face of a State State Attorney General's Memorandum opinion[22/] stating that the Federal government alone had jurisdiction over geothermal operations on these lands by virtue of its having pre-empted the field.[23/]

Also, in our March, 1980 Final Report on the State Water Laws of the Pacific Rim states we noted the possibility for juris-

* See Appendix A

dictional conflict over geothermal regulation on Federal lands between those states defining "geothermal resources", explicitly or implicitly, as "water" and the Federal government. This is predominantly true in the Rocky Mountain-Basin Range states but may also arise in Oregon and/or Washington State, where the appropriation system of water rights reigns supreme. The most likely problem areas appear to be in Idaho and perhaps Utah.

Recently, the U.S. Supreme Court has upheld[24/] a decision of the Ninth Circuit Court of Appeals which may be of some help in heading off either or both of these potentially disastrous (for geothermal commercialization) legal confrontations. In Ventura County v. Gulf Oil Corp.,[25/] the appellate court roundly affirmed the U.S. District Court for the Central District of California in its flat denial of local well-siting authority over a Federal oil lessee. For our purposes, the key findings include one to the effect that the scope of Congressional power to do as it pleases with the Federal lands is virtually unlimited under the Property Clause of the U.S. Constitution. Citing the U.S. Supreme Court's 1976 opinion in the analogous case of Kleppe v. New Mexico,[26/] (where the high court said: "we have repeatedly observed that [t]he power over the public land thus entrusted to Congress [under the Property Clause] is without limitations."[27/]) the Ninth Circuit opined that: "In light of Kleppe, the renewed attempt to restrict the scope of Congressional power under the Property Clause in the present

case is legally frivolous"[28] (emphasis added). Thus the power is there, but was it being exercised so as to pre-empt local regulation?

Another significant factor in the Ventura Co. case from geothermal's perspective is the Ninth Circuit's finding that the "extensive" Federal regulatory framework which exists under the Mineral Leasing Act of 1920 was ample evidence of a Congressional intent to fully exercise its Constitutional grant of authority and thereby pre-empt non-Federal regulation of mineral lessee activities.[29] Those regulatory procedures are virtually identical to the tangle facing Federal geothermal lessees.

Though the fact situation on mineral-severed lands, as opposed to that on purely Federal lands, presents a slightly different picture, we believe that the logic followed by the Federal courts in Ventura County v. Gulf Oil Corp., as well as those decisions rendered under the Stock Raising Homestead Act itself,[30] will combine for a similar result. The law in the latter cases seems clear. The Federal mineral estate lease obtains right not only to the subsurface, but to "so much of the surface as is reasonably necessary for removal of the [minerals]."[31] Logically, if that limited portion of the surface "attaches", if you will, to the mineral lease, the extensive Federal (and therefore pre-emptive) geothermal regulatory jurisdiction that applies to both the surface and subsurface activities of the Federal geothermal lessee should "attach" as well.

Hopefully, the Ventura County case may be useful in persuading Lake and other counties not to contest Federal geothermal regulation on mineral-severed lands. Whether it will be equally helpful in deterring state water agencies remains to be seen.

FOOTNOTES

CHAPTER ONE

1/ P.L. 95-95, Title I, §128, 91 Stat. 742, 42 U.S.C. §7491.

2/ 41 U.S.C. §7472.

3/ 42 U.S.C. §7491.

4/ 42 U.S.C. §7472

5/ id..

6/ 42 U.S.C. §7473.

7/ 42 U.S.C. §7474.

8/ 42 U.S.C. §7474(d).

9/ id. (emphasis added).

10/ 42 U.S.C. §7473(2).

11/ 42 U.S.C. §7474(a).

12/ 30 U.S.C. §1014(c) (1) and (2).

13/ 16 U.S.C. §1133.

14/ See J.M. Energy Consultants, Inc. Rpt. No. 1018 (Feb. 1980).

15/ 44 Fed. Reg. 69122 (E.P.A., 4/30/79), at p. 69122.

16/ id., citing 42 Fed. Reg. 55280 (D.O.I., 10/14/77).

17/ 44 Fed. Reg. 69123 (E.P.A., 11/30/79).

18/ 43 Fed. Reg. 7721 (D.O.I., 2/24/78).

19/ 44 Fed. Reg. 8909 (E.P.A., 2/12/79).

20/ 44 Fed. Reg. 69123.

21/ The surface was sold (patented) to private parties under the now-repealed Stock Raising Homestead Act of 1916, formerly 43 U.S.C. 291-302, Act of Dec. 29, 1916, 39 Stat. 862 et. seq..

22/ See July 31, 1979 Memo from Asst. Attorney General to the California Division of Oil & Gas Supervisor (Marty Mefford).

23/ id..

24/ 40 C.C.H. B-1543 (March 31, 1980).

25/ 601 F. 2d 1080 (1979).

26/ 426 U.S. 529.

27/ 426 U.S. at 539.

28/ 601 F. 2d at 1083.

29/ 601 F. 2d at pp. 1083-1084.

30/ See, e.g., Bourdieu v. Seaboard Oil Corp., 38 C.A. 2d 11, 48 Cal. App. 2d 429.

31/ id..

CHAPTER TWO: SPECIFIC FEDERAL LAND MANAGEMENT ACTIONS AFFECTING CALIFORNIA GEOTHERMAL PROSPECTS

(A) BLM Draft Environmental Impact Statement On Geothermal Leasing Within The Coso K.G.R.A.:

This highly-prized geothermal area has been the subject of an extensive B.L.M.-contracted E.I.S.[1/] since September, 1978. Last month saw the publication of the Draft E.I.S.[2/] with the Final Statement slated for release in September and a December, 1980 lease sale still in the offing. The Draft E.I.S. covers "a major portion of the Coso K.G.R.A.,"[3/] some 72,640 acres both within and to the west of the China Lake Naval Weapons Center (N.W.C.). This area is, in turn, dubbed the "Coso Geothermal Study Area" (C.G.S.A.). The Draft E.I.S. "assumes a geothermal potential within the C.G.S.A. of 600 megawatts (M.W.), and a development "model" of eleven 50 M.W. generating stations, plus a probable 50 M.W. plant to be installed [on the Navy's own acquired lands within the N.W.C.] under the Navy's own geothermal development program."[4/] That Navy proprietary program is being conducted by California Energy Co. (C.E.C.) of Santa Rosa under a 30 year contract. This firm has done quite a bit of work in Central America, especially in Nicaragua.

B.L.M.'s Draft E.I.S. for Coso considers no less than six alternatives, from (1) "Offer No Leases" and (5) "Defer Leasing Until A Federal Testing Program Can Be Implemented", to (4) "No

surface occupancy on lands with significant conflicts"[5/] and (2) "Lease all lands except those with significant surface conflicts."[6/] The other two alternatives are a bit more unique, namely (3) "Partial deferred leasing to protect cultural resources"[7/] and (6) "Unitization at the leasing stage."[8/]

As far as the most visible issue at Coso, Native American concern over access to and use of the hot springs themselves for religious purposes, the Draft states that: "Native American use of the Coso Hot Springs and the Prayer Site should not be interfered with if proposed mitigation is implemented."[9/] Despite this finding, and the death of a state bill to "protect" such sensitive hot springs, the possibility of a Native-American lawsuit, based perhaps on last years Congressional passage of the "American Indian Religious Freedom Act,"[10/] is the greatest threat to Coso's geothermal future. The lesson of Baca, New Mexico must not be forgotten by D.O.E..

The Draft itself states that: "The integrity of Coso Hot Springs, highly valued by the Native Americans, may be lessened."[11/] This statement is based upon a conclusion that the local "ground water table would be lowered." . . . [and] Flow to Coso Hot Springs could [therefore] be altered."[12/] Other adverse impacts predicted by the Draft include: a decrease in visibility from 61 to 51 miles;[13/] increase in both hydrogen sulfide (H_2S) and particulate (T.S.P.) emissions up to but not exceeding state and Federal standards;[14/] an increase in localized noise levels;[15/] an

adverse affect on "the wildlife community structure;"[16] some "visual degradation";[17] and "some loss of cultural resources . . . unless geothermal development activities were greatly restricted to cleared areas."[18] In sum, the negatives don't appear to be all that large on balance.

In addition to its positive finding on the Native-American access issue, the Draft also reports that: "The N.W.C. mission should not be substantially hindered."[19] Thus the two largest issues confronted in the E.I.S. appear to have been settled positively from geothermal's perspective. Considering that the stated goal of the E.I.S. is to assess and analyze "the cumulative environmental impacts of the BLM geothermal leasing program and the China Lake Naval Weapons Center's geothermal development program, and any other related actions . . . [at] all stages of geothermal development . . . [from] preliminary exploration . . . [to] electrical power generation . . .",[20] B.L.M.'s tentative bottom line appears to be an extremely encouraging one at this stage. There are a few problems, however. They fall mainly into the categories of archaeology/cultural resource; water quality; and air quality; as well as wildlife, noise and land use.

(1) Scope of the Study Area:

Though the Coso K.G.R.A. contains over 106,000 acres, only 72,640 of those acres are even being considered for leasing by the B.L.M.. Of those being studied, some 41,560 acres are within the N.W.C. itself[21] and only 28,160 are

"public lands" outside the N.W.C. boundaries.[22/] Another 2,920 acres within the study area (C.G.S.A.) are Navy-acquired lands and therefore subject to the Navy's development program only, as noted earlier.[23/] The bulk of the nearly 34,000 K.G.R.A. acres that are not considered for leasing by the B.L.M. document are on public lands but are inside the N.W.C. itself.[24/] They are excluded because B.L.M., apparently in advance of the E.I.S. itself, "determined [them] to be environmentally sensitive and less likely to contain an economic geothermal resource during the establishment of the scope of this E.I.S.".[25/] The author does not know if the B.L.M. statements as to geothermal resource potential and availability are well founded or not. Only one paragraph later B.L.M. categorizes the state of resource knowledge at Coso as "not well characterized . . . [and] . . . insufficient."[26/] As for the statements on "environmental sensitivity", op. cit., it would seem that the E.I.S. is supposed to determine that, not have it "defined away" in advance. It might well be that last year's Navy "Final Programmatic E.I.S."[27/] (F.E.I.S.) on its program supplied the key data, since most of the excluded area is within the N.W.C., but that is not made clear. The BLM document does note, however, that the Navy F.E.I.S. is "referenced with some frequency . . . because of the interrelationships, the adjacency of the lands involved and the similarity of

the environmental conditions."[28/]

(2) Mitigation Measures And Unavoidable Adverse Impacts:

The Draft E.I.S. contains an extensive series of "mitigation measures" that will be applied to all geothermal leases issued within the C.G.S.A..[29/] Encouragingly enough, though, it begins that discussion with a listing of the post-lease, U.S.G.S.-supervised "check points" at which "site-specific impacts can be mitigated by the reviewing agencies [U.S.G.S., B.L.M., Navy]."[30/] This is a far cry from the posture usually adopted by Federal land managers in previous pre-lease geothermal documents. There the subsequent sharing of post-lease regulatory jurisdiction with the U.S.G.S. is routinely dismissed as "inadequate to protect surface resources, etc."[31/]

Mitigation of air quality impacts will require watering roads and providing carpools for on-site workers to cut down "fugitive dust" (T.S.P.) and a monitoring system for H_2S.[32/] Truck deliveries and on-site operations will be limited to daytime hours within 1.5 miles of "sensitive receptors" such as the Native American Prayer Site or Coso Hot Springs itself. No noise mitigation, other than that required by U.S.G.S., even on power plants, will be necessary in all other areas.[33/] Structures must be built to withstand earthquakes as required by the State of California.[34/]

A "hydrology Monitoring Plan" must be implemented by all

lessees however.[35] B.L.M. fears a lowering of the Rose Valley ground water table.[36] After consulting with Inyo County and Los Angeles Department of Water and Power to "determine the amount of acceptable water table lowering"[37] certain measures, including the injection of spent geothermal fluids beneath the fresh water acquifer in Rose Valley, may be required. The key problem is that no conclusion has been reached on the issue of physical interconnection between the geothermal and fresh water reservoirs.[38] Until an acceptable answer to that question is forthcoming, serious concern over possible "mining" of ground water will confront geothermal development at Coso.

A monitoring program at the Coso Hot Springs themselves is also going to be required. Though use of ground water in the area is slight,[39] any impact upon the hot springs could lead to a court fight or a reduction or even cessation of some geothermal operations.

The "rare and endangered" Mohave ground squirrel will also present problems. A post-lease study of population density for that species will be required[40] in addition to a one-half mile "buffer zone" around other raptor and mammal "nesting sites".[41]

All Class II air quality areas (see Chapter I (A), above) will be ineligible for the siting of "permanent visible structures."[42] Transmission lines and roads will be allowed, however.[43]

Extensive mitigation of the impacts upon cultural resources will be ordered on all leases around Coso. A large percentage of the leased area may, in fact, be nominated to the National Register of Historic Places "as a thematic group."[44/] Over 500 sites are believed to be included in the C.G.S.A.,[45/] covering some 50% of its acreage.[46/] During the Draft E.I.S.'s review period, the California State Historic Preservation Officer (S.H.P.O.) will consult with B.L.M. and the Navy on the exact scope of the nominations to the Register.[47/] In any event, each Coso lease will contain a stipulation requiring a "cultural resources survey" by a qualified archeologist prior to any lessee operations.[48/] On any lease area turning up "sensitive" historical or cultural sites, no surface use will be permitted and B.L.M., Navy, California S.H.P.O. and the Federal National Advisory Council on Historic Preservation will develop "appropriate mitigation measures."[49/] Lessee personnel will also be required to attend a "cultural resources educational program"[50/] to upgrade their sensitivity to cultural values.

Coso Road, which passes through the prayer site, will also be "rerouted to the south,"[51/] at lessee expense, to avoid interference with Native American religious ceremonies.

Finally, a new Class I or II solid waste disposal site will have to be developed, probably at lessee expense, to

avoid the risk of spills during long hauls to the Los Angeles-area sites now "closest" to Coso.[52/]

Concurrence in all of these myriad measures will allow private geothermal developer access to the 72,560 Coso K.G.R.A. acres covered by the B.L.M.'s Draft E.I.S.. The unanswered "unavoidable adverse impacts" questions center on the nature of the physical interconnection with the ground water reservoir and on the degree of "sensitivity" of the numerous Native American/archaeological cites either already identified or estimated as occurring throughout the area.

(3) Recommendation:

The Draft E.I.S. for Coso seems to be a strong document. D.O.E. should encourage B.L.M. to proceed with leasing in concert with the numerous but necessary mitigation measures we have outlined, even if culturally-sensitive areas are later reduced to no surface use status.

(B) BLM Draft Land Use Plan Alternatives And Environmental Impact Statement For The California Desert Conservation Area (C.D.C.A.):

(1) Background:

As we noted in our February, 1980 "Tracking Report,"[53/] the fate of geothermal commercialization at many of the Federally-managed target prospects in the Pacific Rim region is often determined, not in geothermal-specific documents such as that just reviewed with regard to Coso, but in broader

"land use planning" decisions which cover enormous amounts of acreage with a blanket of multiple-use priorities. Such is indeed the case in California for the Coso, Randsburg and the Imperial-Riverside County target prospects located on Federal land (East Mesa, North Salton Sea, Yuha, etc.).

This relationship comes into sharper focus when one contemplates B.L.M.'s "Draft E.I.S. and Plan Alternatives" for the 12.1 million acre "California Desert Conservation Area" (C.D.C.A.). In 1978, the author noted the uncannily precise convergance of B.L.M.'s timetables for creation of both the C.D.C.A. land use plan (mandated by Congress in the F.L.P.M.A. of 1976 as October 1, 1980)[54/] and the Coso geothermal leasing E.I.S..[55/] What will the interrelationship between the two do to geothermal commercialization?", he asked.

B.L.M.'s "preview" of the C.D.C.A. land use plan was not very encouraging.[56/] The Draft E.I.S. on that Plan is now formally out and we will analyze four of the Draft Plan's nine planning elements: (1) mineral exploration and development; (2) energy production/utility corridors; (3) cultural resources/Native American values; and (4) wilderness.

We will also discuss their designation of 16 so-called "Areas of Critical Environmental Concern" (A.C.E.C.) as required by F.L.P.M.A.. However, these do not seem to vary from one alternative to another.

(2) Multiple Use Planning:

Basically, the C.D.C.A. plan involves a matrix system matching one of four alternative multiple-use management classes or priority systems with each of the nine substantive planning elements ("its muscles and sinems", as B.L.M. puts it) for each area within the sprawling 12.1 acre domain carved out by Congress four years ago. These four classification alternatives are: (1) intensive use and development; (2) moderate use with competing resource trade offs; (3) limited use favoring protection of sensitive resources; (4) and controlled use preserving wilderness values."[57/]

These four classifications are then redesignated as "No Action" ((4) controlled use); "Protection" ((3) limited use); "Balanced" ((2) moderate use); and "Use" ((1) intensive use) to simplify the naming of the four alternate land use plans embodying their value rankings and conflicting use guidelines.

Once an area is designated, e.g., for "moderate use" (the "Balanced" alternative), the guidelines for that multiple-use class are in two parts: "Resource Management Guidelines" and "Conflict Resolution Criteria and Specific Guidelines."[58/] The former establish the general ranking or hierarchy of resource values to be used in the management of the area, while the latter provide more detailed guidance

to the land manager in the event of a conflict between two uses, both of which are allowed under the classification in effect for that area. E.g., although "mineral exploration and development" is allowed in a "moderate use" area with an E.A.R. but without an E.I.S.,[59] so are numerous other activities. In the event of a potential land use conflict, however, the mineral use must be "traded off" with other allowable uses.[60] The "screening process", if you will, then becomes more finely tuned. Mineral use now must be "compatible with appropriate mitigation for natural and cultural resources."[61] This is also true in the event of a conflict in an area classed for "intensive use."[62]

(3) The C.D.C.A. Plan Alternatives:

Since we have already sketched the basic approach of each of the four multiple-use classes and their corresponding "Plan Alternatives", we will compare each's overall impact with regard to the four key substantive elements noted above. After that we will look at the four alternatives from the standpoint of the future for geothermal commercialization at each target prospect within the C.D.C.A..

(a) Mineral Exploration and Development:

(i) "Use" Alternative:

This alternative would allow leasing and development in 86% of the C.D.C.A., or on 4.1 million acres.[63] So-called "stringent restrictions" would be applied

to only 12%, or roughly half a million acres,[64] and "no leases" will be issued on only 2% (90,000 acres).[65]

(ii) "Balanced" Alternative:

The "Balanced" approach would allow leasing and development on only 51% (2.44 million acres),[66] with "stringent" controls on another 41% (1.941 million acres)[67] and "no leasing" on the remaining 8% (380,000 acres).[68]

(iii) "Protection" Alternative:

Under this classification scheme, only 10% of the C.D.C.A. (or 518,000 acres)[69] would be open to leasing and development, with fully 54% (2.7 million acres)[70] subject to "stringent" restrictions and a whopping 36% (1.793 million acres)[71] barred from any mineral leasing whatsoever.

(iv) "No Action" Alternative:

This continuation of present management practices would allow leasing and development on 70% (3.4 million) of the C.D.C.A.'s acreage,[72] with only 30% (1.482 million acres) subject to "stringent" controls[73] and no outright leasing bans in effect anywhere. There is no chance of this occurring however, as B.L.M. has been ordered by Congress to come up with a comprehensive plan. "No action" is simply a "baseline" to use for comparison purposes.

(b) Energy Production/Utility Corridors:

(i) "Use":

This approach would provide for 28 transmission corridor routes and 3.7 million acres of allowable power plant acreage at 13 separate sites, with 194,000 acres specifically earmarked for geothermal plant sites.[73/]

(ii) "Balanced":

This more moderate alternative would allow only 20 corridors, 6 power plant sites on 2.435 million acres and designate 100,000 acres specifically for geothermal power plants.[74/]

(iii) "Protection":

Only 15 transmission corridors, 6 plant sites limited to 511,000 acres and a scant 26,000 for geothermal plants will be allowed under this third alternative.[75/]

(iv) "No Action":

Present practices allow (in theory) an unlimited number of power corridors, 13 sites on unlimited acreage and 194,000 acres for geothermal plants.[76/]

(c) Cultural Resources/Native American Values:

(i) — (iv) All Alternatives:

While the number of "cultural resource areas"

(C.R.A.'s) does not vary among the four alternatives (133 sites on roughly a million acres)[77/], and neither does the amount of C.D.C.A. acreage devoted to so-called "Traditional Areas" (T.A.'s) (42 on 1.118 million acres)[78/], the "level of protection provided" for these two types of sites varies greatly. It goes from 97% of both receiving "high to moderate" protection[79/] under the "Protection" alternative to 56% of the C.R.A.'s and 79% of the T.A.'s receiving such a high level of protection under "Balanced"[80/] and to only 24% of the C.R.A.'s and 39% of the T.A.'s protected rather intensively under "Use".

(d) Wilderness:

(i) — (iv) All Alternatives:

The amount of recommended wilderness acreage under "Use" is slight (6 sites on 602,000 acres, or only 5% of the B.L.M. share of the C.D.C.A.)[81/]. But it rises to 39 areas covering 1.828 million acres (15%) under "Balanced"[82/] and to a whopping 108 areas (5.22 million acres) under "Protection". This latter figure is the amount recommended in the C.D.C.A. wilderness inventory (see our November 1979 "Tracking Report") and equals fully 43% of the land area under consideration by B.L.M. with the C.D.C.A.[83/]

(e) A.C.E.C.'s:

(i) — (iv) All Alternatives:

Unlike its wilderness recommendations, B.L.M. has no "sliding scale" for A.C.E.C.'s. 16, covering 194,000 acres, will be designated as part of the final C.D.C.A. land use plan, regardless of the alternative selected.[84/]

(4) Plan Alternatives And Their Impact Upon Specific Geothermal Prospects:

Despite the obvious variance from one plan alternative to another in the opportunities for geothermal leasing and development or power plant/transmission corridor siting, it is not possible to completely and accurately gauge the impact upon individual target prospects in this fashion. E.g., "Use" would allow leasing on 86% of the B.L.M.'s C.D.C.A. acreage. But if the 12% subject to "stringent restrictions" (or the 2% to be withheld from any leasing) overlapped Coso, East Mesa or Randsburg, then "Use" is not the best choice. We are therefore turning to those specific target prospect areas in order to assess the site-specific impact of each of the Plan Alternatives. We will focus on the treatment of both exploration/development and production/facility siting within each alternative.

(a) Coso:

(i) "Use":

This alternative is the best from a Coso geothermal perspective. A large area within the K.G.R.A. is set aside for possible power plant siting[85/] and several, two-mile-wide transmission corridors (tracking existing D.W.P. and Edison lines) are tracked through the Coso area as well.[86/]

(ii) "Balanced":

This alternative does not appear to differ that greatly from "Use" as far as Coso is concerned.[87/]

(iii) "Protection":

As expected, this approach would ban all plant siting near Coso and cut allowable transmission corridors almost as drastically.[88/]

(b) East Mesa:

(i) "Use":

East Mesa fares very well under "Use", with a very large number of plant sites and at least three possible transmission corridor outlets.[89/]

(ii) "Balanced":

Though not as attractive as "Use", "Balanced" appears to allow adequate plant and corridor sites.[90/]

(iii) "Protection":

East Mesa's development would be limited by the "Protection" plan, but would not be expunged like Coso's. Only one corridor would be available but plant sites appear satisfactory.[91/]

(c) Randsburg:

(i) "Use":

This former mining town fares well under "Use", though the large wilderness recommendations to the south of the Rand Mountains are clearly a cause for concern. An existing transmission corridor lies within a few miles of the K.G.R.A.'s western edge.[92/]

(ii) "Balanced":

Randsburg seems largely unaffected by the seitch to "Balanced", as were Coso and East Mesa.[93/]

(iii) "Protection":

Any future geothermal development at Randsburg would be foreclosed by this alternative.[94/] No geothermal plant sites are allowed.

(5) Summary:

As was probably the idea all along, adoption of the "Balanced Alternative" will probably be B.L.M.'s decisional bottom line on C.D.C.A. Land Use. That Plan Alternative represents a pretty solid value trade-off between the extremes of "Use" on the one hand and "Protection" on the other. From

the standpoint of geothermal commercialization, a "Balanced" land use/management plan for the C.D.C.A. would appear to allow for fairly full development at the area's "target prospects" — Coso, East Mesa and Randsburg. Overall, some 51% of the C.D.C.A. (2.44 million acres) would be available for relatively unhindered leasing and exploration under "Balanced", with another 41% (1.941 million acres) subject to "stringent" controls. Twenty transmission corridors and 100,000 acres earmarked for geothermal plant sites would also be available.

(C) BLM Final Wilderness Inventory For California:

(1) Background:

At the end of 1979, the B.L.M. State Office for California published its "Final Intensive Inventory" of potential wilderness areas on public lands outside of the California Desert Conservation Area (C.D.C.A.).[95/]

The Final Wilderness Inventory for the C.D.C.A. had been published in March, 1979 in order to keep in step with the land use planning process for that area. It totaled a whopping 5.5 million acres. But as we reported on those C.D.C.A. wilderness designations (as part of our October, 1979 "Site-Specific Analysis").[96/] Randsburg appears to be the only potential victim of B.L.M.'s wilderness review process in that area.

Outside of the C.D.C.A., B.L.M. identified some 266 units as candidates for wilderness designation in its Initial Inven-

tory. These "possibles" covered some 3.2 million acres. After studying all of these units more closely, over two million acres were dropped as unsuitable for wilderness designation for one reason or another. B.L.M.'s final non-C.D.C.A. wilderness inventory now comprises only ninety three (93) units or parts thereof totalling 1.134 million acres.

Those units will now be managed in accordance with B.L.M.'s "Interim Management Guidelines" for wilderness study areas. As we noted in an earlier analysis of those guidelines, "For all intents and purposes, areas included in the B.L.M. wilderness inventory will have to be written off for the next decade as far as geothermal commercialization is concerned."[97/] Even though B.L.M. now states that its "study" phase on these parcels will take only two years, with another three years expected for Presidential recommendation and final Congressional action,[98/] this timetable can be expected to slip as conservationist groups protest any pro-multiple use/anti-wilderness decisions by B.L.M.. Already, appeals and protests have been filed on over one million acres (1,015,869) that were <u>not</u> selected by B.L.M. for its Final Inventory.[99/] In view of this enormous potential for delay, we shall examine the B.L.M.'s non-C.D.C.A. wilderness inventory to see if any of its Wilderness Study Areas (W.S.A.'s) will impinge upon any of the other geothermal "target pros-

pects" in California, particularly near The Geysers.

(2) The Geysers-Area Wilderness Study Areas (W.S.A.s):

Only two units in the vicinity of The Geysers K.G.R.A. (and the four other Lake County-area K.G.R.A.s) are included in B.L.M.'s Final Inventory. These are: "Rocky Creek-Cache Creek" (B.L.M. area CA-050-317, B.L.M. Map 05-A) and "Cedar Roughs" (B.L.M. area CA-050-331, B.L.M. Map 05-A).

(a) "Cedar Roughs W.S.A." (CA-050-331):

This fairly solid block of 7,343 acres of public land (160 acres are private) is in Napa County west of Lake Berryessa, east of Hardin Creek and south of Pope Creek. It is pretty well to the south of any of the K.G.R.A. boundaries and no comments concerning its geothermal potential were directed to B.L.M. during the inventory phase.

(b) "Rocky Creek - Cache Creek W.S.A." (CA-050-317):

This large (33,982 acre) unit, 98% public land, represents a potential problem. It is located north of the Rieff-Rayhouse Road and only several miles to the east of Clear Lake and Clear Lake Highlands. Although there is no geothermal development in the area at present, six pro-geothermal comments were received by B.L.M. during its inventory phase. As we have noted on several occasions however, such comments are, as B.L.M. put it "study phase, rather than inventory phase, consi-

derations."[100/]

(c) "Knoxville W.S.A." (CA-050-319):

Another potential conflict between geothermal and wilderness may already been averted when B.L.M. decided to drop the "Knoxville" wilderness area (CA-050-319) from its inventory. This 5,624 acre parcel is almost totally within the Knoxville K.G.R.A.. This decision is being protested, however, by pro-wilderness groups.

(3) Mono-Long Valley Area W.S.A.'s:

Although this K.G.R.A. is almost entirely on Forest Service land, quite a bit of B.L.M.-administered acreage borders it and much of that is being recommended for formal wilderness designation. These W.S.A.s include: several units to the east of Mono Lake (to the north of the K.G.R.A.) particularly Granite Mountains (B.L.M. Area CA-010-090); a few more still further south towards Owens Lake (Southern Inyo B.L.M. Area CA-010-056); Cerro Gordo (B.L.M. Area CA-010-055); and Independence Creek (B.L.M. Area CA-010-057). At this time they do not appear to present any problems for geothermal commercialization; however.

(4) Susanville Area W.S.A.s:

Though numerous parcels in and around the Susanville K.G.R.A. were included in the Initial B.L.M. Wilderness Inventory, almost all have been dropped from the final version. The exception is the Tunnison Mountain W.S.A. (B.L.M. Area

CA-020-311) consisting of some 21,450 acres. No comments concerning any geothermal potential were forthcoming, however, and the area seems sure to be designated as wilderness based upon its setting.[101/]

(5) Summary:

With the possible exception of the one unit in The Geysers only Randsburg, of all the California target prospects, appears to have been hit hard by B.L.M.'s wilderness review process thus far. D.O.E. should, however, press B.L.M. to open up Randsburg for geothermal exploration by U.S.G.S. during the "study phase" in order to prove the K.G.R.A.'s non-wilderness, geothermal energy potential.

(D) FOREST SERVICE FINAL ENVIRONMENTAL ASSESSMENT ON GEOTHERMAL LEASING WITHIN THE MONO-LONG VALLEY K.G.R.A.:

(1) Background:

The long and until now sad saga of geothermal development within the Inyo National Forest's Mono-Long Valley K.G.R.A. may have finally come to an end. As we reported in our February "Tracking Report",[102/] it took the Forest Service six years to come up with a land management plan for the Inyo National Forest's "Mammoth-Mono Planning Unit" (M.M.P.U.), containing a geothermal area that developers had been seeking access to since the early 1960s. That task was not completed until May, 1979. But the final decision on the specifics of geothermal leasing/exploration were not contained in that land

management document. Nearly another full year has passed, most of it spent in heated controversy over the stipulations, etc., to be contained in the "final" Forest Service decision document on geothermal leasing. Originally slated for a February lease sale date, more delays pushed the long-awaited Mono-Long Valley offerings back to July, 1980. "Finally", as of April 1980, the Forest Service has made a decision.[103/] Well, sort of. They will "allow" geothermal leasing, but only under a compulsory unitization agreement, and passive exploration only (no deep well drilling). When, and if, a lessee submits a Plan of Operation for such deep hole exploration to the U.S.G.S., the Service and the Survey will then conduct a separate, GS-led "E.A." on that phase, as well as for subsequent phases. The "final" Service "E.A." is therefore not "final" at all. Basically it allows fairly bare bones leasing only. Whether or not deep hole exploration, developmental drilling and/or resource utilization will eventually be "allowed" by them as well is not answered. As the Final E.A. puts it: "The purpose of this analysis . . . is not to provide input for a decision to proceed into the deep well drilling stage, but to provide the necessary contingencies so that the option of proceeding is not foreclosed, and to provide the necessary guidelines and direction for continuity should a decision to proceed in the future."[104/] Thus hedged, the service document then makes

a declaration of "no significant impacts upon the quality of the human environment . . . from geothermal activities involved in up to, but not including deep well drilling."[105/]

What is incredible to the outside observer is that it took the Forest Service this long to recognize the viability of the U.S.G.S.'s phased-E.A. approach to the environmental assessment of post-lease activities. Their April, 1980 decision could have been made years ago, and on an identical basis! They still refuse to credit the G.S., however, referring to the system employed by the Survey for over six years as "conditional development"[106/], thus giving it a gloss of Service creativity.

Their decision to conduct all leasing on a compulsory unitization system[107/] is also not new, having been utilized by the U.S.G.S. previously, and on several occasions.

In any event, on July 15, 1980, B.L.M. will hold a lease sale for the so-called "grandfather area" of the Mono-Long Valley K.G.R.A., covering some 27,460 acres within the Long Valley caldera itself. Whether the geothermal industry will respond enthusiastically at that time is not clear. The reasons for doubt revolve around the additional restrictions (beyond compulsory unitization) that the Service has imposed as the "terms" upon which it has given its Steam Act-granted "consent" to this geothermal lease sale. Those additional restrictions fall into three distinct categories:

(1) "Environmental Concern" maps;[108] (2) "Mitigation Procedures";[109] and (3) "Lease Stipulations."[110]

(2) Required Mono-Long Valley Lease Stipulations and Conditions:

If all the required stipulations are actually included in the 18 odd parcels that will be leased in July, the successful bidders may well be hamstrung in their efforts to develop this key target prospect. Included will be provisions to "mitigate" the impacts upon (1) visual; (2) range; (3) recreation; (4) fish and wildlife; (5) timber; (6) watershed; (7) social; and (8) sensitive plants "environmental concerns."[111] Each of those categories has a specific "concern map" for it,[112] detailing where in the lease area it is present. In almost all of the eight cases there are "no surface occupancy" areas set out for the protection of these non-energy values.[113]

A certified survey and statement of no impact by a qualified archaeologist must also be provided by the Lessee for any work beyond "casual use."[114] Disturbance of any "range improvement" may also result in a requirement that the disturbed range be "replaced."[115]

A hot springs monitoring program must be set up by the lessees and they must furnish G.S. and the Service with a final "study" of any impacts upon the area's "hydrologic system . . . including hot springs."[116] Should that study show

an "adverse effect" upon the California Department of Fish & Game's Hot Creek Fish Hatchery, or upon any area hot spring, there must be mitigation measures taken or the lessee(s) will be "required to . . . cease the activity."[117/]

No "surface disturbing activity" can take place until a "detailed study"[118/] of endangered or threatened plants and animals and their habitats is conducted at the lessee's expense and submitted to the Service and G.S..[118/] Road use outside the leased lands shall be by permit from the Service and maintenance shall be by lessees.[119/] Cut or destroyed timber shall subject a lessee to damage payments to the Service.[120/]

Finally, should an acceptable (to G.S. and the Service) unit agreement among all the lessees not be forthcoming within seven (7) months of notification of high bid acceptance, the leases not so covered shall be terminated automatically.[121/]

All in all, it will be a somewhat discouraging future for the prospective Mono-Long Valley lessee, one tightly regulated and carrying with it great risks of termination prior to any final production. It is not an impossible road, however, and the area is believed to have great commercial geothermal potential. Nonetheless, the bottom line will probably be depressed bids and fewer bidders. The geothermal story of Mono-Long Valley is not yet over.

FOOTNOTES

CHAPTER TWO

1/ Rockwell International Corp. is the prime contractor under B.L.M. contract YA-512-CT8-216.

2/ Draft Environmental Impact Statement, Proposed Leasing Within The Coso Known Geothermal Resource Area, Inyo County, California (B.L.M., April 1980), hereinafter "Draft E.I.S.".

3/ Draft E.I.S., at Summary.

4/ id..

5/ id..

6/ id..

7/ id..

8/ id..

9/ id..

10/ P.L. 95-341, 42 U.S.C. §1996.

11/ id..

12/ id..

13/ id..

14/ id..

15/ id..

16/ id..

17/ id..

18/ id..

19/ id..

20/ Draft E.I.S., at p. 1-1 (emphasis added).

21/ ibid., at p. 1-3.

22/ id..

23/ id..

24/ id..

25/ id. (emphasis added).

26/ id..

27/ Final Environmental Impact Statement (F.E.I.S.) For The Navy Coso Geothermal Development Program - N.W.C. Ad. Pub. 204 (U.S. Navy China Lake Naval Weapons Center, March 1979).

28/ Draft E.I.S. at p. 1-5.

29/ ibid., at Chap. Three "Mitigation Measures", pp. 3-1 through 3-17.

30/ Draft E.I.S. at p. 3-2.

31/ See, e.g., our November, 1979 and February, 1980 "Tracking Reports" (Nos. 1015 and 1018, respectively).

32/ Draft E.I.S. at pp. 3-2, 3-3.

33/ id..

34/ ibid., at p. 3-4.

35/ id..

36/ See Draft E.I.S., §2.5 "Hydrology", at pp. 2-49 - 2-75.

37/ Draft E.I.S. at p. 3-4.

38/ ibid., at pp. 2-57 et. seq..

39/ id..

40/ ibid., at p. 3-8.

41/ ibid., at p. 3-9.

42/ ibid., at p. 3-10.

43/ id..

44/ ibid., at p. 3-11.

45/ ibid., at p. 2-147.

46/ id..

47/ ibid., at p. 2-150.

48/ id..

49/ ibid., at p. 3-13.

50/ ibid., at p. 3-15.

51/ ibid., at p. 3-16.

52/ id..

53/ J.M. Energy Consultants, Inc. Rpt. No. 1018.

54/ 43 U.S.C. §17, P.L. 95-

55/ See J.M. Energy Consultants Rpt. No. 1002, Streamlining The Federal Geothermal Leasing and Permitting Process (July 30, 1978) at P. 62. The Chapter in question was also reprinted at 19 Nat. Res. Journal 261 as "Federal Land Management Policy And The Drive To Develop An Alternate Energy Source, Geothermal Energy: Shall The Twain Ever Meet" (April, 1979).

56/ J.M. Energy Consultants Rpt. No. 1018, op. cit., at Ch. Two (A).

57/ California Desert Conservation Area Plan Alternatives and Draft Environmental Impact Statement, Calif. B.L.M. (Feb. 1980), at Summary. Hereinafter cited as "Draft Plan".

58/ Draft Plan at p. 22.

59/ Draft Plan at p. 26.

60/ ibid., at p. 28.

61/ ibid., at p. 30.

62/ id..

63/ ibid., Table A-2, at p. 41.

64/ id..

65/ id..

66/ id..

67/ id..

68/ id..

69/ id..

70/ id..

71/ id..

72/ id..

73/ ibid., at pp. 40-41.

74/ id..

75/ id..

76/ id..

77/ ibid., at p. 37.

78/ id..

79/ id..

80/ id..

81/ ibid., at p. 39.

82/ id..

83/ id..

84/ ibid., at p. 38.

85/ ibid., at p. 106.

86/ id..

87/ ibid., at p. 105.

88/ ibid., at p. 104.

89/ ibid., at p. 106.

90/ ibid., at p. 105.

91/ ibid., at p. 104.

92/ ibid., at p. 106.

93/ ibid., at p. 105.

94/ ibid., at p. 104.

95/ Final Intensive Inventory Wilderness, B.L.M. (Dec. 1979), hereinafter cited as "B.L.M. Inventory".

96/ J.M. Energy Consultants, Inc. Rpt. No. 1014 (Oct. 20, 1979), at pp. 18-20.

97/ Tracking Federal Land Management: Report No. 2, J.M. Energy Consultants, Inc. Rpt. No. 1018 (Feb. 20, 1980), at p. 10.

98/ B.L.M. Inventory at p.

99/ Status Summary-Final Intensive Inventory, B.L.M. (March 1980) at pg. 2.

100/ B.L.M. Inventory, at p. 172.

101/ ibid., at pp. 86-87.

102/ J.M. Energy Consultants, Inc. Rpt. No. 1018 (Feb. 20, 1980).

103/ Final Environmental Assessment, Leasing of National Forest Lands for Geothermal Exploration In The Long Valley Caldera, U.S.D.A. Forest Service (Inyo National Forest, March 6, 1980). Hereinafter cited as "Final E.A.".

104/ Final E.A., at "Decision Notice" page proceeding text, Robert L. Rice, Forest Supervisor, at pg. 1.

105/ ibid., at pg. 2.

106/ Final E.A., at pg. iii.

107/ ibid., at p. iv.

108/ ibid., at Appendix V.

109/ ibid., at Appendix VI.

110/ ibid., at Appendix VII.

111/ ibid., at p. VII-1.

112/ ibid., at Appendix V.

113/ See, e.g., the "Composite Environmental Concern Map", at Appendix V.

114/ Final E.A., at p. VII-1.

115/ id..

116/ ibid., at p. VII-2.

117/ id..

118/ id..

119/ id..

120/ id..

121/ ibid., at p. VII-1.

CHAPTER THREE: SPECIFIC FEDERAL LAND MANAGEMENT ACTIONS AFFECTING PACIFIC NORTHWEST GEOTHERMAL PROSPECTS

(A) B.L.M. Final Wilderness Inventory For Oregon and Washington:

(1) Background

B.L.M. is clearly making an all out effort to expedite its wilderness review process. Though they were given an expansive time frame in the Federal Land Policy and Management Act of 1976[1/] — October 1, 1980 for the "inventory" and until October 1, 1991 to make their "study" and forward recommendations to the President — it is quite evident that they intend to beat those generous deadlines by a considerable margin. In Chapter Two (C) we analyzed the California State Office's Final Wilderness Inventory for that state's public lands, completed in December, 1979. Here we turn our attention to the Final Inventory for the Oregon/Washington B.L.M., published at the end of March. It appears to be fairly encouraging.

Out of an Initial Inventory of over seven (7) million acres, almost five million (4.98 million) acres have been dropped from consideration as wilderness.[2/] Another 431,700 acres have been formally and officially designated as wilderness study areas (W.S.A.s).[3/] The remaining 1.75 million acres are being proposed for such a final designation, with the comment period on that action closing on June 25, 1980.[4/] Though the general trend of the numbers looks reasonable, we must

take a look at the situation near each geothermal target prospect in the two states, as we did with the B.L.M. inventory for California and the C.D.C.A. land use plan, in order to determine the exact B.L.M. wilderness impact upon geothermal hydrothermal commercialization in Oregon and Washington.

(2) Oregon Prospects — Alvord and Vale W.S.A.s:

Both of these southeastern Oregon prospects had been blanketed with initial wilderness inventory designations. Alvord Desert itself was virtually inundated by some 296,100 acres of possible wilderness study areas (W.S.A.s).[5/] Fortunately, some 135,210 acres of that total have now been dropped and are not part of the Oregon-Washington B.L.M.'s Final Inventory.[6/] That's the good news.

The bad news is that a whopping 160,890 acres have been selected for designation as a W.S.A. ("Alvord Desert" (Inventory Unit 2-74F) and must therefore be managed under the B.L.M.'s Interim Management Guidelines for W.S.A.s[7/] until a final decision is made by Congress, or until B.L.M. decides to drop them from the inventory due to the presence of a "higher use", such as geothermal commercialization.

In addition to putting that final W.S.A. stamp on the main "Alvord Desert" inventory unit, B.L.M. has also "proposed" a similar final decision on no less than 103,355 acres in three other inventory units bordering the Alvord Desert K.G.R.A.. These are the 67,320 acre "South Steens"

unit (2-85F) in the Steens Mountains (above the Steens fault zone) just to the West[8] and two of the three "Winter Range" units to the northeast of Alvord Desert (units 2-73 A and 2-73 H).[9] These two latter areas total 36,035 acres. Though the author does not have an overlap map definitively showing these areas upon the K.G.R.A., there is no question that the negative impact of a "final" W.S.A. designation on all four units (Alvord, South Steens and the two Winter Range units), totalling 264,245 acres upon geothermal commercialization at the Alvord "target prospect" would be large indeed.

Though the Vale H.S. area is not believed to be that high in geothermal potential and is therefore not a "target prospect" as such, its small (23,000 acre) K.G.R.A. was almost totally surrounded by possible W.S.A.s during the initial inventory stage. Though the bulk of these units have now been dropped, there has been a final W.S.A. designation on one 48,500 parcel ("Fifteenmile", Unit 3-156 A)[10] and several other substantial units in the vicinity have been "proposed" for the final W.S.A. stamp. They include: "Bowden Hills" (Unit 3-118A, 50800 acres); "Owyhee River" (Unit 3-143A, 44760 acres); "Whitehorse Creek" (Unit 3-152, 27350 acres); "Disaster Peak" (Unit 3-153, 13420 acres); "Oregon Canyon" (Unit 3-157, 49400 acres); "Twelvemile" (Unit 3-162A, 27160 acres); and "Jack's Creek" (Unit 3-173A, 78920 acres).[11] Due

to their geologic similarities to Alvord (to the West) and several areas in southern Idaho (to the east) this 291,810 acres must be intensively studied by U.S.G.S. during the "study" phase in order to evaluate their geothermal potential.

(3) Washington Prospects — Mt. St. Helens, Mt. Baker:

None of the B.L.M.s Washington wilderness actions will affect either of these candidates for geothermal commercialization, since both are on Forest Service - administered lands. However the recent eruption of the supposedly-dormant Mt. St. Helens volcano has probably dealt hopes of leasing/developing a large portion of the Gifford Pinchot National Forest a fatal blow. Reticent to consent to leasing in the first place, the Service will now be able to amply justify such inaction.

FOOTNOTES

CHAPTER THREE

1/ P.L. 94-579, §603, 90 Stat. 2785, 43 U.S.C. §1782.

2/ Wilderness Review Intensive Inventory, B.L.M. (March 1980), at pp. 6 and 78, hereinafter cited as "B.L.M. Inventory".

3/ B.L.M. Inventory at p. 6.

4/ ibid., at p. 78.

5/ ibid., at p. 8.

6/ id..

7/ These were reviewed in our February "Tracking Report", J.M. Energy Consultants, Inc. Rpt. No. 1018 (Feb. 1980).

8/ B.L.M. Inventory, at p. 85.

9/ ibid., at p. 84.

10/ ibid., at p. 8.

11/ ibid., at pp. 86-87.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[FRL1349-4; Docket No. OAQPS-79-09]

National Visibility Goal for Federal Class I Areas; Identification of Mandatory Class I Federal Areas Where Visibility Is an Important Value

AGENCY: U.S. Environmental Protection Agency.

ACTION: Final action.

SUMMARY: Section 169A(a)(2) of the Clean Air Act requires EPA to promulgate, after consultation with the Secretary of the Department of the Interior (DOI), a list of mandatory class I Federal areas where visibility is an important value. On February 12, 1979 (44 FR 8909) the Environmental Protection Agency (EPA) proposed, after consultation with DOI, a list of mandatory class I Federal areas where visibility is an important value. EPA is today promulgating the proposed list without a change.

EFFECTIVE DATE: November 21, 1979.

ADDRESSES: This promulgation and background information relevant to it are available for public inspection during normal business hours at the EPA Central Docket Section (Docket No. OAQPS-79-09) Room 2903B, 401 M Street S.W., Washington, D.C. 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Johnnie L. Pearson, Standards Implementation Branch, Control Programs Development Division, Office of Air Quality Planning and Standards, Environmental Protection Agency (MD-15), Research Triangle Park, North Carolina 27711. Phone: (919) 541-5497.

SUPPLEMENTARY INFORMATION:

Background

The Clean Air Act Amendments of 1977 added Section 169A to the Clean Air Act. In this Section, Congress established, as a national goal, "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." Mandatory class I Federal areas are composed of all international parks, all national wilderness areas and memorial parks which exceed 5,000 acres in size and all national parks which exceed 6,000 acres in size. These areas must have been in existence on the date of enactment of the 1977 amendments and may not be redesignated. There are 158 such areas.

An initial step in developing programs which make reasonable progress toward meeting this national goal is set out in Section 169A(a)(2), which requires that DOI, in consultation with other Federal Land Managers, review all mandatory class I Federal areas and identify those areas where visibility is an important value. EPA, after consulting with DOI, must promulgate a list of mandatory class I Federal areas in which it determines visibility is an important value.

On October 14, 1977 (42 FR 55280) DOI published notice seeking public comment on its preliminary determination that 153 of the 158 mandatory class I Federal areas possessed visibility as an important value. These 153 areas were identified by a task force, of which EPA was a consulting member, that created and applied the following criteria:

1. Does the legislation for the area indicate that scenic value was an important consideration for establishing the area? or,

Is the area possessed of scenic values that are important to public enjoyment?

2. Are scenic values of the area primarily in the form of panoramic background, intermediate or foreground views?

3. Do natural sources of visibility impairment seriously affect the ability of the public to appreciate visibility as an important value?

4. For those areas in which natural sources of visibility impairment seriously affect public appreciation of scenic values, is the magnitude of scenic value sufficient to warrant protection from man-caused sources?

The process by which the criteria was applied to each Federal mandatory class I area involved (1) the participation of the individual park superintendents and forest rangers who surveyed each area, and (2) a review of the park superintendents' and forest rangers' recommendations by the regional staffs responsible for the class I areas in their region and by the Washington, D.C. staff who consulted with the regional staffs. Through this consultation process, each of the 158 mandatory class I Federal areas was evaluated and tested against the criteria.

Review and analysis of public comments and DOI's preliminary findings produced one change in the criteria used to identify whether visibility is an important value. The Character of the Scenic Values (Step 3) used in the logic network for evaluating class I areas was changed so that only those areas which possess no sweeping view of background features, panoramas, or views of middleground or background features would fail to be identified to possess visibility as an important value in this step. Under the preliminary criteria, an area was identified as not possessing visibility as an important value if views were primarily, or mostly, of foreground features less than one mile distant, although one of more background or middleground view or panorama was present. The one-mile cutoff is used because it is the shortest distance at which a broad perception of an area is possible, i.e., it allows an individual to observe overall patterns, shapes, and textures of the area. The one-mile cutoff is consistent with definitions of foreground, middleground, and background presented in the USDA, Forest Service Landscape Management Book, Volume I.

The application of the revised criteria identified three areas which possess visibility as an important value in addition to the 153 areas so identified in the preliminary findings. The three additional areas are: Mammoth Cave National Park, Kentucky; Moosehorn Wilderness, Maine; and Medicine Lake Wilderness, Montana. DOI published this final list of 156 areas on February 24, 1978 (43 FR 7721).

On February 12, 1979, EPA proposed to list these same 156 areas.

EPA Review

From the earliest stages of development, EPA followed DOI's progress in developing and applying the criteria by which the list of class I visibility protection areas was produced. EPA also reviewed the criteria and the comments obtained from public meetings conducted throughout the country. Finally, the workbooks, containing narratives provided by Federal Land Managers, were reviewed with particular attention paid to the logic behind the application of criteria to specific areas and the extensive public comment received. It is EPA's judgment that the Federal class I areas meeting visibility protection requirements as determined by DOI are correct. Therefore, EPA is promulgating the proposed list without any changes in designations. It should be noted, however, that the February 12, 1979 proposal of this action (44 FR 8909) contained an error. Although Minarets Wilderness in California was evaluated as having visibility as an important value, it was inadvertently omitted from the February 12, 1979 proposal and is properly listed in this promulgation. Since Minarets Wilderness was included on the twice published DOI list

of potentially eligible areas, and since EPA's proposal specifically mentioned the only two negative identifications on that list, EPA does not believe it is necessary to repropose Minarets Wilderness and as such promulgates it at this time.

Significant Comments

Both written comments and comments from the public hearings conducted by DOI were considered in this promulgation. The significant comments are discussed below.

Most speakers at the public hearings disagreed with the premise that a mandatory class I area could exist where visibility is not an important value. The commenters felt the intent of Congress and the national goal was to include all mandatory class I Federal areas in the visibility protection program.

EPA has found that visibility is an important value in 156 out of 158 mandatory class I areas. The two wildernesses which were shown not to have visibility as an important value (Rainbow Lake, Wisconsin and Bradwell Bay, Florida) did not meet the criteria established by DOI. In requiring an analysis of the visibility values in all mandatory class I Federal areas before determining whether visibility protection is necessary, Congress clearly did not necessarily intend that visibility be identified as an important value in all class I areas. See also H.R. Rep. No. 95–294, 95th Cong., 1st Sess. 205 (1977).

The greatest number of comment letters received pertained to the lack of information concerning the impact of listing an area as one where visibility is an important value. The commenters expressed concern over the extent of social and economic impacts on communities surrounding class I areas. Commenters felt that there was a need to evaluate more fully the impact of natural sources, investigate the existing air quality in and around class I areas, and list sources which may potentially be required to install Best Available Retrofit Technology (BART). Specifically, two commenters opposed the designations of Mount Zirkel Wilderness, Rawah Wilderness, and Rocky Mountain National Park as areas where visibility is an important value due to the uncertainty of how the designations would affect the local economy. In addition, groups in the Pacific Northwest protested the reduction or abolition of prescribed burning. One commenter expressed the same concern for forest products industries located near Cohutta Wilderness, Okefenokee Swamp, and Wolf Island Wilderness.

As many commenters recognize, to assess, at the present time, the impact of a future regulatory program under Section 169A is neither possible nor required by law. In Section 169A Congress explicitly called for the listing of areas subject to regulation far in advance of the time when EPA must develop specific regulations for the States which contain guidelines and techniques for making reasonable progress towards the national goal. Congress revealed its sensitivity to the economic impact of any Section 169A regulations by making a cost and energy analysis part of the control technology standard and providing the possibility for exemption to that standard. However, there is no indication that economic impacts be somehow considered—in advance of the regulations themselves—in compiling the Section 169A(a)(2) list. A regulatory analysis is being prepared and these issues, along with those pertaining to prescribed burning, will be dealt with there. This analysis will also address the elements of economic impact set out in Section 317.

The second most mentioned comment was the subjective nature of the evaluation criteria. Two commenters felt key terms such as "important," "scenic value," "public appreciation," and "seriously affect" should have been defined prior to the evaluations. Other comments expressed concern over the dependence of the criteria upon highly variable human judgments, and felt a need to measure objectively the visibility of vistas from their associated viewpoints and incorporate such measurements into the evaluation.

While EPA acknowledges that in some respects the established criteria are subjective, it believes that the subjectiveness of these evaluations is to some extent inherent in the task of assigning "value" to the visibility of an area. Congress required DOI and EPA to accomplish this task in a very short time and did not anticipate that technical problems involved in objective measurements of visibility impairment would be solved before the task could be completed. Since a technical base broad enough to more quantitatively assess the class I area evaluations was not available in the time frame specified by Congress, criteria agreed on by EPA and DOI were developed which established certain priorities and were readily available for use by Federal Land Managers. Sections 165(d) and 169A which, among other things, charge Federal Land Managers with an "affirmative responsibility" to protect visibility values, together show the great weight Congress intended the judgment of Federal Land Managers to have. A technical base for use in future regulations in response to Section 169A is now being established which will quantify and define many of the concerns mentioned above.

One commenter, noting that the effect of the listing will not be precisely known until the Section 169A regulations are proposed, suggested that promulgation of the final list be postponed until after the hearing on the proposed regulations and that the public record be left open during the interim. EPA believes such an approach would be contrary to the Congressional scheme—clearly set out in Section 169A—of promulgating the list of areas in advance, even of the report to Congress containing the technical outline for the eventual visibility regulations.

This does not mean, however, that future public comment and its consideration by EPA as to the specific visibility objectives, values, and important vistas of each area is precluded. EPA recognizes that the future rulemaking under Section 169A will require such additional area-specific analysis. At EPA's request, DOI and the Forest Service have conducted a preliminary analysis of the range of scenic vistas, the nature of visual values and a preliminary estimate of the degree of existing natural and man-made visibility impairment found in each area. EPA expects that the future proposal of visibility regulations will require States and Federal Land Managers to develop such additional area-specific assessments. Both this process, and the proposal itself, will be subject to public comment. To the extent that further comment and additional analysis (or anything else) affects the basis for the list, EPA will propose appropriate revisions.

Several comments asserted that Section 169A is limited to vistas *within* the boundaries of mandatory class I Federal areas, and, accordingly, that the EPA and DOI lists are defective because there is no indication that this alleged "jurisdictional limit" was observed by the persons engaged in the identification process. This observation overlooks DOI's specific discussion of this issue in its February 24, 1978, notice (43 FR 7721, 7724). DOI acknowledged the dispute as to whether vistas without the boundaries of the subject class I areas are protected, but noted that it need not reach the issue because the 156 mandatory class I Federal areas identified were based on views within

the areas seen from within the areas. The two areas not identified possessed no out-of-area vistas which would otherwise qualify them for the list. EPA also recognizes that there is an issue as to the asserted "jurisdictional limits" of Section 169A. EPA is announcing its preliminary position and soliciting comments on a number of issues in the Advance Notice of Proposed Rulemaking published elsewhere in this Federal Register. For the purposes of this list under Section 169(a)(2), however, EPA has adopted DOI's approach and considered only vistas within an area as observed from a location within the same area. The two mandatory class I Federal areas identified as not possessing visibility as an important value do not have out-of-park vistas which, if considered, would warrant their listing.

Both written comments and those received from public hearings felt criterion 4 (for those areas in which natural sources of visibility impairment seriously affect public appreciation of scenic values, is the magnitude of the scenic value sufficient to warrant protection from man-made causes?) was vague. One written comment suggested the elimination of criterion 4, calling it "inappropriate and illogical." This commenter felt that controlling man-made sources when natural sources of impairment degrade the scenic value such that public enjoyment is diminished is not valid. On the other hand, comments obtained from the public hearings expressed the opinion that man-made pollution can significantly increase visibility impairment even when natural sources are present.

It is important to consider that while natural visibility impairment does exist in some class I areas, it will not only vary in magnitude, but also in duration. The criterion was established to recognize natural sources of impairment which may be of consequence, but it also allows areas with particularly significant scenic values protection from man-made impairment. While the magnitude and duration of natural impairment may be great, the imposition of man-made impairment can significantly reduce the visual appreciation of an area even though it is experiencing some form of natural visibility impairment. Therefore, EPA agrees with the comment that even in areas with substantial natural visibility impairment, important visibility values exist and can be enhanced by control of man-made sources of visibility impairment.

DOI public hearings received numerous comments on the importance of nighttime sky viewing. Many commenters felt this should be included in the criteria to evaluate the importance of visibility to a class I area. EPA acknowledges that nighttime skies are an important part of the wildnerness experience, especially to campers and backpackers. EPA feels that this aspect can be considered a visibility value for use in establishing visibility objectives by the Federal Land Managers. It is not considered, however, a major factor in distinguishing between class I areas or evaluating the importance of visibility in one class I area as opposed to another. Indeed, EPA received no written comments suggesting that the two areas excluded from the list promulgated today should have been included because of their nighttime skies.

Several comments received discussed individual wildernesses and reasons why they should or should not be included as areas warranting visibility protection. While most questions are answered in the evaluations of the workbooks, a few will be discussed here.

Although Brigantine Wilderness is used primarily for fishing and birdwatching, the scenic value of the wilderness cannot be separated from the total enjoyment of the park. Even though fishing is the primary attraction, the views one sees are part of the total experience which the public has come to enjoy. Therefore, visibility is an important value contributing to the total enjoyment of this area.

Breton Wilderness was another area for which one commenter urged deletion. In response to the comment that the area is not eligible because of size limitations. EPA has noted that DOI promulgated Breton at 5000 acres and it therefore meets the size requirements set by Congress. The comment also mentioned the poor maintenance of the area. Poor maintenance, however, is irrelevant to whether Congress intended visibility to be protected in the nation's wildlife areas. Breton Wilderness meets the requirements set forth in the criteria, and it is EPA's responsibility to acknowledge this and designate it as an area warranting visibility protection.

In the preliminary evaluation by the National Park Service, Mammoth Cave National Park was excluded from the list of areas having visibility as an important value. Evidence was presented at the public hearings which supported the inclusion of the park in the list. This evidence included legislative history which showed the surface area was a major consideration in the designation of Mammoth Cave as a national park and as a result this park was proposed by DOI and EPA.

Comment was also received concerning the independence of EPA's evaluation of class I areas under consideration for visibility protection. One commenter felt "EPA should not parrot DOI's list" and another commenter did not want EPA to "rubber stamp" DOI's designations. EPA has, however, conducted an independent and thorough evaluation of the workbooks submitted by the Federal Land Managers and has taken into consideration comments supplied at the public hearings held around the country.

Numerous other written and oral comments were received which concerned the upcoming regulations. These commenters did not object to the list, but were more concerned with the potential impact it would cause. These questions will be reviewed and discussed in the regulatory procedure under Sections 165 and 169A of the Clean Air Act.

This promulgation is issued under the authority granted in Sections 101(b)(1), 110, 169A(a)(2), and 301(a) of the Clean Air Act as amended (42 U.S.C. 7401(b), 7410, 7491(a)(2), 7601(a)).

Dated: November 21, 1979.

Douglas M. Costle,

Administrator.

PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES

Part 81 of Chapter I, Title 40 of the Code of Federal Regulations is amended by adding Subpart D as follows:

Subpart D—Identification of Mandatory Class I Federal Areas Where Visibility is an Important Value

Sec.

Authority.—Secs. 101(b)(1), 110, 169A(a)(2), and 301(a) of the Clean Air Act as amended (42 U.S.C. 7401(b), 7410, 7491(a)(2), 7601(a)).

Subpart D—Identification of Mandatory Class I Federal Areas Where Visibility Is an Important Value

§ 81.400 Scope.

Subpart D, §§ 81.401 through 81.437 lists those mandatory Federal Class I areas, established under the Clean Air Act Amendments of 1977, where the Administrator, in consultation with the Secretary of the Interior, has determined visibility to be an important value. The following listing of areas where visibility is an important value represents an evaluation of all international parks (IP), national wilderness areas (Wild) exceeding 5,000 acres, national memorial parks (NMP) exceeding 5,000 acres, and national parks (NP) exceeding 6,000 acres, in existence on August 7, 1977. Consultation by EPA with the Federal Land Managers involved: the Department of Interior (USDI), National Park Service (NPS), and Fish and Wildlife Service (FWS); and the Department of Agriculture (USDA), Forest Service (FS).

§ 81.401 Alabama.

Area name	Acreage	Public law establishing	Federal land manager
Sipsey Wild	12,646	93-622	USDA-FS

§ 81.402 Alaska.

Area name	Acreage	Public Law establishing	Federal land manager
Bering Sea Wild	41,113	91-622	USDI-FWS
Mount McKinley NP	1,949,493	64-353	USDI-NPS
Simeonof Wild	25,141	94-557	USDI-FWS
Tuxedni Wild	6,402	91-504	USDI-FWS

§ 81.403 Arizona.

Area name	Acreage	Public Law establishing	Federal land Manager
Chiricahua National Monument Wild	9,440	94-567	USDI-NPS
Chiricahua Wild	18,000	88-577	USDA-FS
Galiuro Wild	52,717	88-577	USDA-FS
Grand Canyon NP	1,176,913	85-277	USDI-NPS
Mazatzal Wild	205,137	88-577	USDA-FS
Mount Baldy Wild	6,975	91-504	USDA-FS
Petrified Forest NP	93,493	85-358	USDI-NPS
Pine Mountain Wild	20,061	92-230	USDA-FS
Saguaro Wild	71,400	94-567	USDI-FS
Sierra Ancha Wild	20,850	88-577	USDA-FS
Superstition Wild	124,117	88-577	USDA-FS
Sycamore Canyon Wild	47,757	92-241	USDA-FS

§ 81.404 Arkansas.

Area name	Acreage	Public law establishing	Federal land manager
Caney Creek Wild	14,344	93-622	USDA-FS
Upper Buffalo Wild	9,912	93-622	USDA-FS

81.405. California.

Area name	Acreage	Public Law establishing	Federal land manager
Agua Tibia Wild.	15,934	93-632	USDA-FS.
Caribou Wild	19,080	88-577	USDA-FS.
Cucamonga Wild.	9,022	88-577	USDA-FS.
Desolation Wild.	63,469	91-82	USDA-FS.
Dome Land Wild.	62,206	88-577	USDA-FS.
Emigrant Wild	104,311	93-632	USDA-FS.
Hoover Wild	47,916	88-577	USDA-FS.
John Muir Wild.	484,673	88-577	USDA-FS.
Joshua Tree Wild.	429,690	94-567	USDI-NPS.
Kaiser Wild	22,500	94-577	USDA-FS.
Kings Canyon NP.	459,994	76-424	USDI-NPS.
Lassen Volcanic NP.	105,800	64-184	USDI-NPS.
Lava Beds Wild.	28,640	92-493	USDI-NPS.
Marble Mountain Wild.	213,743	88-577	USDA-FS.
Minarets Wild	109,484	88-577	USDA-FS.
Mokelumne Wild.	50,400	88-577	USDA-FS.
Pinnacles Wild	12,952	94-567	USDI-NPS.
Point Reyes Wild.	25,370	94-544, 94-567	USDI-NPS.
Redwood NP	27,792	90-545	USDI-NPS.
San Gabriel Wild.	36,137	90-318	USDA-FS.
San Gorgonio Wild.	34,644	88-577	USDA-FS.
San Jacinto Wild.	20,564	88-577	USDA-FS.
San Rafael Wild.	142,722	90-271	USDA-FS.
Sequoia NP	386,642	26 Stat. 478 (51st Cong.).	USDI-NPS.
South Warner Wild.	68,507	88-577	USDA-FS.
Thousand Lakes Wild.	15,695	88-577	USDA-FS.
Ventana Wild	95,152	91-58	USDA-FS.
Yolla-Bolly-Middle-Eel Wild.	109,091	88-577	USDA-FS.
Yosemite NP	759,172	58-49	USDI-NPS.

§ 81.406 Colorado.

Area name	Acreage	Public Law establishing	Federal land manager
Black Canyon of the Gunnison Wild	11,180	94-567	USDI-NPS.
Eagles Nest Wild	133,910	94-352	USDA-FS.
Flat Tops Wild	235,230	94-146	USDA-FS.
Great Sand Dunes Wild	33,450	94-567	USDI-NPS.
La Garita Wild	48,486	88-577	USDA-FS.
Maroon Bells-Snowmass Wild	71,060	88-577	USDA-FS.
Mesa Verde NP	51,488	59-353	USDI-NPS.
Mount Zirkel Wild	72,472	88-577	USDA-FS.
Rawah Wild	26,674	88-577	USDA-FS.
Rocky Mountain NP	263,138	63-238	USDI-NPS.
Weminuche Wild	400,907	93-632	USDA-FS.
West Elk Wild	61,412	88-577	USDA-FS.

§ 81.407 Florida.

Area Name	Acreage	Public Law establishing	Federal land manager
Chassahowitzka Wild	23,360	94-557	USDI-FWS.
Everglades NP	1,397,429	73-267	USDI-NPS.
St. Marks Wild	17,745	93-632	USDI-FWS.

§ 81.408 Georgia.

Area Name	Acreage	Public Law Establishing	Federal Land Manager
Cohotta Wild	33,776	93-622	USDA-FS.
Okefenokee Wild	343,850	93-429	USDI-FWS.
Wolf Island Wild	5,126	93-632	USDI-FWS.

§ 81.409 Hawaii.

Area name	Acreage	Public law establishing	Federal land manager
Haleakala NP	27,208	87-744	USDI-NPS.
Hawaii Volcanoes	217,029	64-171	USDI-NPS.

§ 81.410 Idaho.

Area Name	Acreage	Public Law Establishing	Federal Land Manager
Craters of the Moon Wild.	43,243	91-504	USDI-NPS.
Hells Canyon Wild[a].	83,800	94-199	USDA-FS.
Sawtooth Wild	216,383	92-400	USDA-FS.
Selway-Bitterroot Wild[b].	988,770	88-577	USDA-FS.
Yellowstone NP[c].	31,488	17 Stat. 32 (42nd Cong.).	USDI-NPS.

a Hells Canyon Wilderness, 192,700 acres overall, of which 108,900 acres are in Oregon and 83,800 acres are in Idaho.

b Selway Bitterroot Wilderness, 1,240,700 acres overall, of which 988,700 acres are in Idaho and 251,930 acres are in Montana.

c Yellowstone National Park, 2,219,737 acres overall, of which 2,020,625 acres are in Wyoming, 167,624 acres are in Montana, and 31,488 acres are in Idaho.

§ 81.411 Kentucky.

Area name	Acreage	Public law establishing	Federal land manager
Mammoth Cave NP	51,303	69-283	USDI-NPS.

§ 81.412 Louisiana.

Area name	Acreage	Public law establishing	Federal land manager
Breton Wild	5,000+	93-632	USDI-FWS.

§ 81.413 Maine.

Area name	Acreage	Public law establishing	Federal land manager
Acadia NP	37,503	65-278	USDI-NPS.
Moosehorn Wild	7,501		USDI-FWS.
(Edmunds Unit)	(2,782)	91-504	
(Baring Unit)	(4,719)	93-632	

§ 81.414 Michigan.

Area name	Acreage	Public law establishing	Federal land manager
Isle Royale NP	542,428	71-835	USDI-NPS.
Seney Wild	25,150	91-504	USDI-FWS.

§ 81.415 Minnesota.

Area name	ACreage	Public law establishing	Federal land manager
Boundary Waters Canoe Area Wild	747,840	99-577	USDA-FS.
Voyageurs NP	114,964	99-261	USDI-NPS.

§ 81.416 Missouri.

Area name	Acreage	Public Law establishing	Federal land manager
Hercules-Glades Wild	12,315	94-557	USDA-FS.
Mingo Wild	8,000	94-557	USDI-FWS.

§ 81.417 Montana.

Area name	Acreage	Public Law establishing	Federal land manager
Anaconda-Pintlar Wild.	157,803	88-577	USDA-FS.
Bob Marshall Wild.	950,000	88-577	USDA-FS.
Cabinet Mountains Wild.	94,272	88-577	USDA-FS.
Gates of the Mtn Wild.	28,562	88-577	USDA-FS.
Glacier NP	1,012,599	61-171	USDI-NPS.
Medicine Lake Wild.	11,366	94-557	USDI-FWS.
Mission Mountain Wild.	73,877	93-632	USDE-FS.
Red Rock Lakes Wild.	32,350	94-557	USDI-FWS.
Scapegoat Wild.	239,295	92-395	USDA-FS.
Selway-Bitterroot Wild[a].	251,930	88-577	USDA-FS.
U. L. Bend Wild.	20,890	94-557	USDI-FWS.
Yellowstone NP[b].	167,624	17 Stat. 32 (42nd Cong.).	USDI-NPS.

a Selway-Bitterroot Wilderness, 1,240,700 acres overall, of which 988,770 acres are in Idaho and 251,930 acres are in Montana.
b Yellowstone National Park, 2,219,737 acres overall, of which 2,020,625 acres are in Wyoming, 167,624 acres are in Montana, and 31,488 acres are in Idaho.

§ 81.418 Nevada.

Area name	Acreage	Public Law establishing	Federal land manager
Jarbidge Wild	64,667	88-577	USDA-FS.

§ 81.419 New Hampshire.

Area name	Acreage	Public Law establishing	Federal land manager
Great Gulf Wild	5,552	88-577	USDA-FS.
Presidential Range-Dry - River Wild	20,000	93-622	USDA-FS.

§ 81.420 New Jersey

Area name	Acreage	Public Law establishing	Federal land manager
Brigantine Wild	6,603	93-632	USDI-FWS.

§ 81.421 New Mexico

Area name	Acreage	Public Law establishing	Federal land manager
Bandelier Wild	23,267	94-567	USDI-NPS.
Bosque del Apache Wild	80,850	93-632	USDI-FWS.
Carlsbad Caverns NP	46,435	71-216	USDI-NPS.
Gila Wild	433,690	88-577	USDA-FS.
Pecos Wild	167,416	88-577	USDA-FS.
Salt Creek Wild	8,500	91-504	USDI-FWS.
San Pedro Parks Wild	41,132	88-577	USDA-FS.
Wheeler Peak Wild	6,027	88-577	USDA-FS.
White Mountain Wild	31,171	88-577	USDA-FS.

§ 81.425 Oregon.

Area name	Acreage	Public law establishing	Federal land manager
Crater Lake NP	160,290	57-121	USDA-NPS.
Diamond Peak Wild	36,637	88-577	USDA-FS.
Eagle Cap Wild	293,476	88-577	USDA-FS.
Gearhart Mountain Wild	18,709	88-577	USDA-FS.
Hells Canyon Wild[a]	108,900	94-199	USDA-FS.
Kalmiopsis Wild	76,900	88-577	USDA-FS.
Mountain Lakes Wild	23,071	88-577	USDA-FS.
Mount Hood Wild	14,160	88-577	USDA-FS.
Mount Jefferson Wild	100,208	90-548	USDA-FS.
Mount Washington Wild	46,116	88-577	USDA-FS.
Strawberry Mountain Wild	33,003	88-577	USDA-FS.
Three Sisters Wild	199,902	88-577	USDA-FS.

a Hells Canyon Wilderness, 192,700 acres overall, of which 108,900 acres are in Oregon, and 83,800 acres are in Idaho.

§ 81.426 South Carolina.

Area name	Acreage	Public law establishing	Federal land manager.
Cape Romain Wild	28,000	93-632	USDI-FWS.

§ 81.427 South Dakota.

Area name	Acreage	Public law establishing	Federal land manager
Badlands Wild	64,250	94-567	USDI-NPS.
Wind Cave NP	28,060	57-16	USDI-NPS.

§ 81.428 Tennessee.

Area name	Acreage	Public law establishing	Federal land manager
Great Smoky Mountains NP[b]	241,207	69-268	USDI-NPS.
Joyce Kilmer-Slickrock Wild[a]	3,832	93-622	USDA-NPS.

a Joyce Kilmer-Slickrock Wilderness, 14,033 acres overall, of which 10,201 acres are in North Carolina, and 3,932 acres are in Tennessee.
b Great Smoky Mountains National Park, 514,758 acres overall, of which 273,551 acres are in North Carolina, and 241,207 acres are in Tennessee.

§ 81.429 Texas.

Area name	Acreage	Public law establishing	Federal Land Manager
Big Bend NP	708,118	74-157	USDI-NPS.
Guadalupe Mountains NP	76,292	89-667	USDI-NPS

§ 81.430 Utah.

Area name	Acreage	Public law establishing	Federal land manager
Arches NP	65,098	92-155	USDI-NPS.
Bryce Canyon NP	35,832	68-277	USDI-NPS.
Canyonlands NP	337,570	88-590	USDI-NPS.
Capitol Reef NP	221,896	92-507	USDI-NPS.
Zion NP	142,462	68-83	USDI-NPS.

§ 81.431 Vermont.

Area name	Acreage	Public law establishing	Federal land manager
Lye Brook Wild	12,430	93-622	USDA-FS.

§ 81.432 Virgin Islands.

Area name	Acreage	Public law establishing	Federal land manager
Virgin Islands NP	12,295	84-925	USDI-NPS.

§ 81.433 Virginia.

Area name	Acreage	Public law establishing	Federal land manager
James River Face Wild	8,703	93-622	USDA-FS.
Shenandoah NP	190,535	69-268	USDI-NPS.

§ 81.434 Washington.

Area name	Acreage	Public law establishing	Federal land manager
Alpine Lakes Wild.	303,508	94-357	USDA-FS.
Glacier Peak Wild.	464,258	88-577	USDA-FS.
Goat Rocks Wild.	82,680	88-577	USDA-FS.
Mount Adams Wild.	32,356	88-577	USDA-FS.
Mount Rainer NP.	235,239	30 Stat. 993 (55th Cong.).	USDI-NPS.

Area name	Acreage	Public law establishing	Federal land manager
North Cascades NP.	503,277	90-554	USDI-NPS.
Olympic NP	892,578	75-776	USDI-NPS.
Pasayten Wild.	505,524	90-544	USDA-FS.

§ 81.435 West Virginia.

Area name	Acreage	Public law establishing	Federal land manager
Dolly Sods Wild	10,215	93-622	USDA-FS.
Otter Creek Wild	20,000	93-622	USDA-FS.

§ 81.436 Wyoming.

Area name	Acreage	Public law establishing	Federal land manager
Bridger Wild	392,160	88-577	USDA-FS.
Fitzpatrick Wild.	191,103	94-567	USDA-FS.
Grand Teton NP.	305,504	81-787	USDI-NPS.
North Absaroka Wild.	351,104	88-577	USDA-FS.
Teton Wild	557,311	88-577	USDA-FS.
Washakie Wild	686,584	92-476	USDA-FS.
Yellowstone NP[a].	2,020,625	17 Stat. 32 (42nd Cong.).	USDI-NPS.

[a] Yellowstone National Park, 2,219,737 acres overall, of which 2,020,625 acres are in Wyoming, 167,624 acres are in Montana, and 31,488 acres are in Idaho.

§ 81.437 New Brunick, Canada.

Area name	Acreage	Public law establishing	Federal land manager
Roosevelt Campobello International Park	2,721	88-363	Not applicable.

§ 81.422 North Carolina.

Area name	Acreage	Public law establishing	Federal land manager
Great Smoky Mountains NP[a]	273,551	69-268	USDI-NPS.
Joyce Kilmer-Slickrock Wild[b]	10,201	93-622	USDA-FS.
Linville Gorge Wild	7,575	88-577	USDA-FS.
Shining Rock Wild	13,350	88-577	USDA-FS.
Swanguarter Wild	9,000	94-557	USDI-FWS.

[a] Great Smoky Mountains National Park, 514,758 acres overall, of which 273,551 acres are in North Carolina, and 241,207 acres are in Tennessee.

[b] Joyce Kilmer-Slickrock Wilderness, 14,033 acres overall, of which 10,201 acres are in North Carolina, and 3,832 acres are in Tennessee.

§ 81.423 North Dakota.

Area Name	Acreage	Public law establishing	Federal land manager
Lostwood Wild	5,557	93-632	USDI-FWS.
Theodore Roosevelt, NMP	69,675	80-38	USDI-NPS.

§ 81.424 Oklahoma.

Area Name	Acreage	Public law establishing	Federal land manager
Wichita Mountains Wild	8,900	91-504	USDI-FWS.

[FR Doc. 79-36712 Filed 11-29-79; 8:45 am]
BILLING CODE 6560-01-M