Before the
INTERSTATE COMMERCE COMMISSION

Finance Docket No. 32760

UNION PACIFIC CORPORATION, UNION PACIFIC RAILROAD COMPANY
AND MISSOURI PACIFIC RAILROAD COMPANY
— CONTROL AND MERGER —
SOUTHERN PACIFIC RAIL CORPORATION,
SOUTHERN PACIFIC TRANSPORTATION COMPANY, ST. LOUIS
SOUTHWESTERN RAILWAY COMPANY, SPael CORP. AND THE
DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY

RAILROAD MERGER APPLICATION

VOLUME 6, PART 6
ENVIRONMENTAL REPORT (EXHIBIT 4) -
APPENDIX

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Attorneys for Union Pacific
Corporation, Union Pacific
Railroad Company and Missouri
Pacific Railroad Company

November 30, 1995
Dear Ms. Donsky:

Gerald Johnston of the California Protection Agency forwarded a copy of your letter of September 22, 1995, concerning a Public Records Act request on two sections of Union Pacific Rail Line, Melrose to Magnolia and Whitter Junction to Colima Junction, and one section of Southern Pacific Rail Line, Alturas to Wer-Jel, in California. The Office of Environmental Health Hazard Assessment has not been involved in any activities concerning these track sections and, therefore, has no documents, correspondence, memoranda, or reports on the subjects listed in your letter.

If you have any questions, please call me at (916) 324-2829.

Sincerely,

David M. Siegel, Ph.D., D.A.B.T, Chief
Hazardous Waste Toxicology Section

cc: William F. Soo Hoo
Chief Counsel
DATE: 10/19/95
TO: Julie Donsky
FROM: Julie Tyson

NO. OF PAGES (INCLUDE COVER) 2
CONTACT NO.: ()
CONTACT NO.: (310) 590-4960

SUBJECT: Written request dated 9/27/95

COMMENTS
According to our records we have no files for the attached request.

URGENT/HAND CARRY
CONFIDENTIAL
INFORMATION

PER YOUR REQUEST
PLEASE COMMENT
ORIGINAL WILL FOLLOW
WILL NOT FOLLOW

0381

TELEFAX NUMBER: (310) 390-4933 OR CALNET (8) 635-4933
CONFIRMATION: (310) 390-4980 OR CALNET (8) 635-4980
September 22, 1995

Environmental Protection Agency
555 Capitol Mall
Sacramento, CA 95814

Dames & Moore is preparing the Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The attached list shows the merger related abandonment sites (and construction sites if information is available) currently identified within your state. In some states there also will be rail segments that will be affected by the proposed merger. We will advise you if and when they are identified in your state.

To prepare our Environmental Report, we are requesting that you inform us of any concerns you have and provide information regarding:

- Protected species information (state, federal) within 5 miles of each site;
- Listing of critical habitats within 5 miles of each site (it would be very helpful if you would mark the locations of the T&E species and critical habitats on the attached topographic maps);
- Locations of parks and refuges in proximity to the proposed projects;
- Any other information you would like to provide regarding environmental matters within your jurisdiction; and
- Citations to any permitting/approval authority your agency believes it may have over the project(s) we discussed.

We would appreciate receiving the requested information at your earliest convenience. We would further appreciate it if the information could be supplied in writing or orally to the undersigned at the address and phone/fax numbers on this letterhead. The railroads will be filing our Environmental Report with their application to the Interstate Commerce Commission ("ICC") on or before December, and thus your prompt reply will ensure that our report, which the ICC will consider in preparing its own environmental assessment of the above-described project, includes consideration of your views.

We very much appreciate your assistance.

Very truly yours,

DAMES & MOORE, INC.

Julie Donsky
Environmental Scientist
Ms. Julie Donsky  
Dames & Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Re: Your Letter of 9/22/95; Public Records Act Request

Dear Ms. Donsky:

I am in receipt of your requests for documents under the California Public Records Act (Government Code §6250, et. seq.), which have been forwarded to me from our parent agency -- the California Environmental Protection Agency (Cal-EPA). All requests for public records made to Cal-EPA are forwarded to each of the individual Departments for review. Because of this, many of the requests we receive are not applicable to any documents which we maintain.

The information you have requested does not appear directed toward any records that may be maintained by the Department of Pesticide Regulation, as we do not compile records relating to any specific "sites."

If you are requesting any documents which you believe may be maintained by this Department, please specify the type of document so that we may process your request.

If I do not receive a response to this letter by November 21, 1995 I will assume your request does not pertain to any records involving pesticides.

If you have any questions, please feel free to contact me.

Sincerely,

William J. Lenkeit  
Staff Counsel (916) 324-2666
October 26, 1995

Ms. Julie Donsky
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

Re: Your Letter of 9/26/95; Public Records Act Request

Dear Ms. Donsky:

I am in receipt of your requests for documents under the California Public Records Act (Government Code §6250, et. seq.), which have been forwarded to me from our parent agency -- the California Environmental Protection Agency (Cal-EPA). All requests for public records made to Cal-EPA are forwarded to each of the individual Departments for review. Because of this, many of the requests we receive are not applicable to any documents which we maintain.

The information you have requested does not appear directed toward any records that may be maintained by the Department of Pesticide Regulation, as we do not compile records relating to any specific "sites."

If you are requesting any documents which you believe may be maintained by this Department, please specify the type of document so that we may process your request.

If I do not receive a response to this letter by November 21, 1995 will assume your request does not pertain to any records involving pesticides.

If you have any questions, please feel free to contact me.

Sincerely,

William J. Lenkeit
Staff Counsel (916) 324-2666
MEMORANDUM

Date: October 2, 1995
(#951002A.WDB)

From: WILLIAM D. BIXBY, County Administrative Officer

To: BUREAU OF LAND MANAGEMENT
U.S. FOREST SERVICE
CALIFORNIA DEPARTMENT OF FORESTRY AND
FIRE PROTECTION
CALIFORNIA DEPARTMENT OF FISH AND GAME

Subject: Environmental Report for Application for Merger of
Union Pacific and Southern Pacific Railroads.

The enclosed correspondence may be better addressed in part by
your agency.

WDB:vel

cc: Board of Supervisors w/encl
Community Development Department w/encl
Julie Donsky, Dames & Moore

enclosure
REMARKS: □ Urgent □ For your review □ Reply ASAP □ Please comment

RE: Your request for information regarding environmental effects of railroad merger and rail line improvements.

Suggest you contact the California Natural Diversity Data Base for species and habitat information as well as Cal. Fish & Game and US Fish & Wildlife Service - Carlsbad Office.

Suggest you also use your own local company offices for names, phone #, addresses etc. of these and other agencies.

Two rail line construction sites are within unincorporated San Bernardino County - Cajon Creek & St. Hwy '38 (your name: Summit, CA) and Devore (your name: Kenbrook, CA).

The description of improvements is too vague to provide any meaningful input at this time.

Increased train traffic will contribute to vehicle traffic delays, increased queuing and increased vehicle emissions and air quality impacts.
October 31, 1995

Ms. Julie Donsky
Environmental Scientist
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Dear Ms. Donsky:

This letter is in response to your request for information concerning the abandonment of the rail road line from Alturas to Wendall. In general, we feel that information regarding the location, but not necessarily mitigation of T&E species and critical habitats, will be best addressed by the responsible agencies. However, under Sections 40 C.F.R. 1502.16, 40 C.F.R. 1508.14, 40 C.F.R. 1508.3, 40 C.F.R. 1508.8, we feel that a decision to prepare an EIR must also include social, economic and cultural impact of this action. Based on these Sections, we are providing the following information:

1. The Alturas-Wendall line provides the shortest distance to markets south of the County Seat. Rerouting to the west would cost considerably more and negatively affect any industry that might utilize it.

2. The line provides an alternate route when the routes to the west are under maintenance repair or have suffered accidental damage. In addition, the line provides for scheduling flexibility.

3. The City of Lakeview utilizes the line to ship lumber to external markets and biomass to a power plant in Wendall. The City of Lakeview purchased from Southern Pacific those portions of the line north of Alturas. You may wish to check the conditions of sale for provisions that would preclude abandonment.

4. The County of Modoc would suffer in our ability to attract business and industry.

5. In a rapidly changing world, it is difficult to estimate changes in transportation needs. This line provides the only alternative transportation of goods from the rural area to urban areas.
6. The rail line played a large role in the development, customs and culture of the County of Modoc.

7. Cumulative economic impacts should also be considered. The assumptions for analyzes need to be held constant to reflect impacts to the county.

8. Given the proximity of the wildlife refuges and sensitive habitats throughout the county and the economics associated with the construction of a new line, a decision to remove the lines will most likely represent an irreversible commitment. We feel this is a short-term benefit to the determent of long-term goals.

9. Please be aware that under the County Land Use Ordinances any mitigations that involve the transfers or long-term lease of property to State or Federal agencies require county participation throughout the mitigation, negotiation and transfer process.

Contact and notices may be addressed to the Modoc County Planning Department at 202 W. 4th Street, Alturas, CA 96101. Thank you for allowing us the opportunity to participate in the discussion. We look forward to working with you in the future.

Sincerely,

RON McINTYRE
Chairman
Modoc County Board of Supervisors

RM:cm

Enclosures
As an isolated rural community, Modoc County is facing a lack of job and industrial growth. Efforts to deal with the problems of economic development have not so far been successful.

The unemployment rate for the County is 13.4% compared to state and national averages of less than 9%. Other indicators of low employment are an increase of welfare rolls over the last three years disproportionate to the increase in the population. Figures released in April of 1984 by the Modoc County Director of Social Services show that 23% of the population is receiving public assistance of some kind. The number of government jobs decreased between 1980 and 1982 from 36% of the total employment to 18%. During the last two years five ranches have closed and the lumber mill and bank will in Cedarville has shut down. It is not uncommon for the weekly newspaper to show no ads in the help wanted section.

Traditionally, Modoc County has depended on logging, ranching, and government to support its economy. All three of these pursuits are suffering from negative economic factors: logging is affected by decreased demand, ranching by beef prices 20 cents per pound below production cost, and government by budget cutbacks and subsequent manpower reductions. In the last five years, one of the two remaining banks in the county have removed loan authority from local branches, reducing the number of loans available to local businesses. Most businesses are family owned. Other economic factors are isolation, high shipping costs, discontinued railway services, and limited bus service. Modoc County has 16.8% of its residents at or below the poverty level; only three counties show higher figures. The area also has the lowest median housing value ranking, 58th out of 58 counties.

Past efforts to help unemployed persons have been attempted through several programs. The training programs have been hampered by one overriding fact: there are no jobs to put people into at the end of their training. This situation will worsen over time without stimulation of the economy to create or retain jobs.

The location of future development in the County will have an effect on the fiscal benefits derived from growth. In general, the fiscal benefits are likely to be higher if growth is concentrated in or near already developed areas. This allows growth to take advantage of established patterns of service.

For example, for general fund services, the fiscal benefits for commercial or industrial development are usually greater than from other types of development. Motel development typically generates the largest fiscal benefits per square foot of development. Visitor-related development can be a valuable source of revenue growth for the County. Visitor development usually brings high revenues in relationship to the costs required to provide public services for visitors. The growth of commercial and industrial development in Modoc County will depend primarily on the market demand for various business activities and the attraction of Modoc County for visitors.
Almost every aspect of the General Plan will have some indirect relationship to the local economy. Increased or decreased regulations on land development will affect different revenues and expenditures by Modoc County. Any recommendations requiring action by a governmental agency will necessarily mean a shifting of scarce resources from one subject to another. In fact, the policies and actions in the General Plan could touch almost every aspect of the local economy.

However, the more direct relationships are most important. The General Plan will provide one vehicle out of many in the effort to improve the economic conditions in Modoc County. That could take the form of identifying development-oriented actions which might expand the employment base.

ISSUES

While many concerns surround economic development in Modoc County, five issues stand out as most relevant to the General Plan. The issues are job creation, tourism, property tax revenues, general economic growth, and the role of traditional resource-based industries. Certainly all of these issues are interrelated. However, for clarity of discussion, they are separately addressed here. The policies and action program provide a comprehensive, unified approach to dealing with all of the economic development issues.

The underlying, overwhelming economic development issue facing Modoc County is location. The County is quite isolated from the population centers of California, Oregon, and Nevada. Transportation is time consuming, limited, and expensive. Support industries or services are very limited. The labor pool is relatively small and unskilled. The weather is sometimes harsh and the cultural opportunities limited. Few basic natural resources exist close by. There are many small communities in other areas which offer a similar high quality natural environment, but are not so isolated and, therefore, compete much more strongly for the kind of industrial growth which is sought in Modoc County.

For all of these reasons, attracting basic industry or tourism to Modoc County will be difficult. That is not to say, however, that the County cannot attract new industry or tourism. There are a number of strong qualities in Modoc County which establish a reasonable potential for economic development. But because of the obstacles, the County must simply work harder to overcome them and emphasize the positive. The chief determinant of the success or failure of the economic development efforts will depend on the individuals and groups involved in achieving economic development. The greater the level of individual activity and effort, the more likely some success will occur. The policies and action program of this General Plan are intended to support and enhance the many other efforts to achieve positive economic development in Modoc County.

Job Creation

The basis of any economic development effort is job creation. Increased unemployment not only means serious financial hardship for the unemployed and their families, it also means fewer dollars spent in local businesses. It is, therefore, in the interest of the entire community to promote job development in the area.
Modoc County is faced with several possibilities for job creation. The first is to attract new or to assist in the expansion of existing basic industries. The second possibility is to focus on increased tourism as a source of secondary jobs (as well as more actual dollars spent from outside the County). The third possibility lies in attracting service based industries.

The General Plan supports this two part job creation effort in several ways. First, the General Plan identifies appropriate areas for industrial land use and development. Keyed to the land use designations are also policies which guide decisions on industrial development beyond those areas initially identified. Secondly, the Plan identifies key physical obstacles to attracting industry and job growth. An approach to removing those obstacles is also outlined. Third, policies and actions are included which guide the interaction between the County’s General Plan policies (and implementation program) and other job creation efforts by public and private sector organizations. Finally, a detailed approach to increasing tourism and tourist related jobs is outlined. The discussion of the tourism issues is found in the next subsection. The policies and action program are found at the end of this chapter.

Tourism

The natural environment and historic character of Modoc County are two of the County’s strongest assets. Those assets are also the qualities which will, if anything does, affect increased tourism. However, because of the isolation and weather, tourism will not increase on its own momentum. Substantial efforts must be made in order to achieve a level of tourism that will make an economic difference to the county.

Several advantages exist to emphasizing tourism as a major source of economic development. A tourist-based economic development program will tend to minimize permanent population growth. That is an advantage given the strong feeling in the area that Modoc County is a great place to live because there are few people and that the people who do live there are close and friendly. Most of the small town qualities so many people value would be preserved and enhanced. Tourism will also not substantially increase demand on most public facilities such as sewer, water, streets, schools, police, and fire.

A second significant advantage to tourism is that if efforts to increase it are successful, the county should be a better place for permanent residents. Revitalization, beautification, and increased quality of retail services are all things which must occur for tourism to be successful. The results should make the County a better place to live.

Another important advantage of an enhanced tourism economic development program is that it would rely primarily on the efforts of people and businesses currently in the County. That means an improved standard of living and financial situation for present residents.

There are several aspects to enhancing the tourist base of the county’s economy on which the General Plan will concentrate. Each of those areas is described here. The policies and action program is found at the end of this chapter.
State and County Highways

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop \( L_{dn} \) contours for State and County highways within Modoc County. The FHWA Model is the analytical method presently favored by most state and local agencies, including Caltrans, for traffic noise prediction. The FHWA Model is based upon reference energy emission levels for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly \( L_n \) values for free-flowing traffic conditions, and is generally considered to be accurate within plus or minus 1.5 dB. To predict \( L_n \) values it is necessary to determine the hourly distribution of traffic for a typical 24-hour day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic data for existing and future conditions were obtained from Caltrans as summarized in Table II-3. The day/night distribution of traffic was assumed to be 87%/13%, based upon file data for rural highways. Future projections of annual daily traffic volumes are based upon yearly growth factors obtained from Caltrans. Using data from Table II-3 and the FHWA methodology, traffic noise levels as defined by \( L_{dn} \) were calculated for existing (1984) and projected future (2005) traffic volumes. Distances from the center of the roadway to \( L_{dn} \) contour values of 65 and 60 dB are summarized in Table II-4. Highway noise contours predicted for the year 2005 have been plotted on Figures II-4 to II-9 to illustrate traffic noise exposure in the larger communities of Modoc County. It should be noted that since calculations did not take into consideration shielding caused by local buildings or topographical features, the distances reported in Figure II-4 should be considered as worst-case estimates of noise exposure along roadways in the community.

Railroad Operations

Railroad operations in Modoc County are composed of through-freight and local switching operations on the Southern Pacific Transportation Company line (SPRR), which runs in the central portions of the County, and freight operations on the Burlington Northern Railroad on the west side. According to the SPRR Chief Dispatcher's office in Eugene, Oregon, the average number of SPRR operations from Alturas to Tulelake is one eastbound train and one westbound train per day, plus one "local." A low-speed "local" runs three times per week to Lakeview, Oregon, and two freights run per day between Likely and Alturas. Trains may run at anytime during the day or night. According to the Burlington Northern dispatcher, about one freight train passes through Modoc County per day, either north or southbound, usually during daytime hours. Railroad operations are not expected to change significantly within the foreseeable future. Table II-5 lists the predicted \( L_{dn} \) contour locations for present railroad operations in Modoc County. Railroad noise contours are plotted on Figures II-4 through II-9 to illustrate railroad noise exposure in the affected communities in Modoc County.
The Lakeview Branch is a spur line from Alturas, California, to Lakeview, Oregon, a distance of 55 miles. The train, consisting of 2 to 20 freight cars, makes approximately six trips a week leaving Alturas in the afternoon and returning in the early evening.

The original roadbed was built by the Nevada-California-Oregon (NCO) Railway Company and was a narrow gauge system. It was completed in 1912.

The NCO started its railroad to accommodate the ranchers in northeastern California, northwestern Nevada and southern Oregon. The ranchers drove thousands of head of cattle and sheep to Gazelle, California, or Reno, Nevada, and shipped them to market. Passenger service was also a main source of revenue for NCO.

The SPRR desired a shorter route from the Pacific Northwest and bought the Nevada-California-Oregon holdings in 1926 and constructed the (now) main line between Alturas and Klamath Falls, Oregon. The SPRR provided passenger service until 1937. Freight is still transported over the route.

Burlington Northern Railroad serves the west side of the County on a north-south route, and a short east-west segment which intersects with the north-south route. The trains stop at Tionesta and Stronghold and are used for transportation of commodities. Passenger service is not provided.

The east/west spur connects Siskiyou County to lines which lead to national railroad transportation facilities. The spur is situated between the towns of Hambone in Siskiyou County and Lookout in Modoc County.

Truck freight lines transport commodities within the County and interregionally. They are capable of reaching areas not served by rail or air such as Surprise Valley. Trucks are used for shipping commodities (i.e. potatoes, onion, alfalfa and livestock) from farm to market, and transporting supplies to the rural communities.

Passenger service is now only provided through Klamath Falls. Passenger trains arrive there twice a day. Connection is made to Alturas via the Greyhound bus service. Scheduling is such that bus connection to and from Alturas to Amtrak is quite inconvenient. Each way has an approximate six-hour differential in arrival and departure times, plus a two-hour bus ride.

AIRPORTS

There are seven public airports in the County (see Figure VIII-8). Alturas, Cedarville, Eagleville, Tulelake, Fort Bidwell, Adin and California Pines Airport. Charter service is available at Alturas Municipal Airport.

The majority of the property at Alturas Municipal Airport is owned by the City - Modoc County owns only those parcels acquired as a part of the recent improvements, and has a long-term lease on the remainder. A similar situation exists at Tulelake, with Modoc County leasing from the City of Tulelake. The Bureau of Land Management (BLM) owns the property at Eagleville and leases it to Modoc County. The four remaining airports operated by the County are under County ownership. The Cal Pines Airport is operated by the Cal Pines CSD, although it is public because it receives state monies.
agricultural aircraft. The remaining operations are primarily small single-engine propeller aircraft, with occasional twin-engine aircraft activity. The majority of operations take place on runway 11. Operations by agricultural aircraft usually take place from 5:00 a.m. to noon during the months of June-August, with up to 30 takeoffs reported for a typical busy day.

ISSUES AND OPPORTUNITIES

Streets and Highways

Planned housing developments with a high volume of traffic require maintenance and improvements of the private roads. Developers and private citizens would like the County to maintain the roads. Due to high costs of maintenance and reduced County budgets, the County refrains from adding the private roads to the County Road Inventory.

Modoc County has a high percentage of road miles as compared to a low percentage of population; therefore, cost of road miles is more per person than in more populated areas. Budgets frequently do not allow road maintenance to standards often desired by citizens.

The issue of substandard private roads becoming part of the County road system raises several concerns, including funding and public safety.

SPRR

In 1983, Burlington Northern proposed to abandon the east-west line from Humbone (Siskiyou County) to Lookout (Modoc County). McCloud River Railroad (MCRR) has opposed the abandonment because it would deny them access to the national railroad system. The proposed abandonment was denied.

Southern Pacific Railroad has proposed to discontinue service on the Lakeview Branch in Modoc County. That line extends from Lakeview, Oregon to Alturas, and is used to transport timber and agricultural commodities.

Aviation

If it were not for monetary constraints, a repaving project for Runway 3/21 at Alturas Municipal Airport would be planned, as well as replacement of base and pavement at Eagleville Airport. Also, the antiquated lighting system at Tulelake would be considered for replacement.

Goods Movement

Rail crossings on many of the roads in Modoc County require maintenance to ensure safe travel by motorists. Possible rail abandonments will affect the economy of towns dependent on that transportation. Trucks will be needed to transport the commodities, thus putting a heavier burden on the highway.

0394
Ms. Julie Donsky  
Environmental Scientist  
Dames & Moore, Inc.  
1701 Golf Road, Suite 1000  
Rolling Meadows, IL 60008

Dear Ms. Donsky:

Enclosed is a copy of the Wildlife Habitat map for Eagle County which is forwarded in response to your letter of September 22, 1995 concerning the Environmental Report for the merger application of the Union Pacific and the Southern Pacific Railroads.

There are other maps which will be forwarded in digital format. Please work with Lloyd Powers in this office to coordinate the desired format.

Please be advised that the Eagle County Land Use Regulations will be applicable to any future use of the rail corridor should the abandonment be approved.

If you have any questions, please contact myself or Lloyd Powers at (970) 328-8760.

Sincerely,

EAGLE COUNTY ENGINEERING DEPARTMENT

George Roussos  
County Engineer

xc: Lloyd Powers, Surveyor  
   Eagle County  
   chrono/file
October 11, 1995

Julie Donsky  
Environmental Scientist  
Dames & Moore  
One Continental Towers  
1701 Golf Rd., Suite 1000  
Rolling Meadows, IL 60008

Re: Abandonment of MoPac Rail Line in Saline County

Dear Ms. Donsky:

This letter is sent in response to your request for information you requested for an Environmental Report on the application for merger of the UP and SP Railroads.

Saline County does not have species information or a listing of critical habitats within 5 miles of the site. There are no parks and refuges in proximity to the projects. Further, our agency does not have any permitting/approval authority over the project.

If you have not done so, I suggest that you also ask for review comments from the City of Gypsum and from the Kansas Department of Wildlife & Parks.

If you have any questions, please call me at (913)826-6565.

Sincerely,

[Signature]

David E. Gurss  
Planning & Zoning Director
October 12, 1995

Ms. Julie Donsky, Environmental Scientist
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

RE: Endangered and Threatened Species Consultation Process
Environmental Report - ICC Submittal
Union Pacific and Southern Pacific Railroads Merger
IDNR Project: #21189

Dear Ms. Donsky:

Thank you for sending the above referenced project to this office for review of the presence of endangered or threatened species, Illinois Nature Preserves, and/or Illinois Natural Area Inventory (INA1) sites. The Illinois Natural Heritage Database was examined and there are several known occurrences associated with portions of this railroad project.

I. Decamp to Edwardsville - Edwardsville to Madison:

The first area of concern is classified as the Eagle Park Marsh INA1 site. This Illinois listed natural area inventory site is depicted on the Granite City, Illinois quadrangle map and exists in portions of the following topographic map sections - T:3N, R:9W, S:31, also T:3N, R:10W, S:36 and last, T:2N, R:10W, S:1, immediately south/southeast of the town of Venice, Illinois in Madison County. Additionally, the Eagle Park Marsh INA1 site is part of the Horseshoe Lake complex located approximately 500 to 1000 feet east of the railroad tracks under investigation. State listed avian species recorded within this INA1 site include: yellow-headed blackbird (Xanthocephalus xanthocephalus), which is classified as State endangered; common moorhen (Gallinula chloropus), which is classified as State threatened; and the pied-billed grebe (Podilymbus podiceps), which is also classified as State threatened.

The second natural resource of concern is a confirmed record of the State listed threatened avian species commonly known as the common moorhen (Gallinula chloropus) within topographic map Section 11, Township 3 north, Range 9 west, immediately southwest of the town of Stallings, Illinois in Madison County. This occurrence is depicted on the Monks Mound quadrangle map and is located approximately 1000 feet south of the railroad tracks in question.

Please Note: As of July 1, 1995, this agency is a part of the newly formed Department of Natural Resources. To conserve natural resources and reduce waste, agencies affected by the merger are using their remaining inventory of stationery and printed envelopes. All correspondence should now be directed to: Illinois Department of Natural Resources, 524 S. Second St., Springfield, IL 62701-1787.
II. Barr to Girard:

The only recorded natural resource of concern currently within the Division's files is a confirmed record of the State listed threatened avian species commonly known as the loggerhead shrike (Lanius ludovicianus) within topographic map Sections 33 and 34, Townships 14 north and 15 north, Range 6 west, immediately north of Lick Creek in Sangamon County, Illinois. This occurrence is depicted on the Loami quadrangle map and is located approximately 1 mile west of the subject railroad tracks.

Because this is an information request, further consultation is not required at this time. However, as authorized by Section 11(a) of the Illinois Endangered Species Protection Act (Ill. Rev. Stat. 1989, ch. 8, par. 341), a proposed land-altering action shall not commence until the completion of the consultation process. This includes any form of construction, land management, or other activity authorized, funded, or performed by a State agency or local unit of government that will result in a change to the existing environmental conditions and/or may have a direct or indirect adverse impact on a listed species or its essential habitat or that otherwise jeopardizes the survival of that species. It is hoped that the environmental information contained in this letter will be used by the appropriate parties during any subsequent planning and construction phases. If construction efforts will be occurring in the specific regions described in this correspondence, it will be necessary to continue the consultation process so that an accurate assessment of potential biological impacts to the listed resources present can be made.

Please be aware that the Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of significant natural features in any part of Illinois. The reports only summarize the existing information regarding the natural features or locations in question known to the Division of Natural Heritage at the time of the request. The reports should never be regarded as final statements on the subject site being considered, nor should they be a substitute for field surveys required for environmental assessments.

If you have any questions or concerns about the above information, please do not hesitate to contact me at (217)785-5500. Thank you for your assistance in this matter.

Sincerely,

Joseph A. Kath
Project Manager
Endangered and Threatened Species Protection Program
CULTURAL RESOURCES DIVISION
HISTORIC PRESERVATION OFFICE
(913) 272-8681 ext. 240

October 17, 1995

Ms. Julie Donsky
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

RE: Union Pacific Railroad Company Abandonments in Dickinson, Saline, Butler, and Harvey Counties

Dear Ms. Donsky:

The materials received September 27, 1995, regarding the above referenced project have been reviewed in accordance with the federal regulations for the protection of historic properties, 36 CFR Part 800.

The State Historic Preservation Officer does not have adequate information to comment on the proposed undertaking. Generally, our involvement in reviews of this nature is to make a determination as to whether or not the rail lines/properties involved are eligible for the National Register, and if so, to comment on what effects the proposed abandonment would have on the properties. We can not make that determination based on the information provided to us. Before we can comment on the project, the following information would have to be submitted: a) photographs (prints) of structures and bridges along the rail lines, b) historical information identifying the role of the individual rail lines and their dates of construction. As soon as we receive this information we will issue our final comment on the undertaking.

You may contact Desmond Anyanwu at (913) 272-8681 ext. 216 if you have any questions.

Sincerely yours,

[Signature]

Richard Pankratz
Deputy State Historic Preservation Officer
October 30, '95

Julie Donsky, Environmental Scientist
DAMES & MOORE, INC.
One Continental Towers
1701 Golf Road - Suite 1000
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

We do not find any property in Johnson County affected by the proposed merger of the Union Pacific and Southern Pacific Railroads on your listing dated October 23, 1995.

This information is being forwarded to E. H. Denton, our County Administrator.

Sincerely,

Beverly L. Baker
County Clerk

BLB:lh
RE: Solicitation of Views on Impact on Sensitive Wildlife and/or Habitat for Union Pacific and Southern Pacific Abandonment Sites.

Dear Ms. Donsky:

Personnel of the Environmental Branch have reviewed the preliminary data for the captioned project. In reviewing our database, no rare, threatened, or endangered species or critical habitats were found within the area of the captioned project that lies in Louisiana. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana’s boundaries. To our knowledge, no wetlands will be adversely affected.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. They should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here.

Sincerely,

Lee Caubarreaux
Office of Wildlife

0401

An Equal Opportunity Employer
October 17, 1995

Dames & Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Sirs:

This letter is in response to your request for any concerns we may have as a result of the proposed merger of the Union Pacific and Southern Pacific Railroads.

We are very concerned about the permanent closing of several of the crossings in Texas County. These closings make it extremely difficult for our farmers and other Agricultural and Oil Field related services. It is very important that we be informed of these permanent closings and that we have open communication in regards to where and when these permanent closings will take place.

The Texas County Commissioners are also extremely concerned about the closing of a crossing for repair. This is because many times the crossing is closed for too long of a time or left in bad repair, which makes the crossing very rough and causes much wear and tear on trucks and farm machinery. We understand the need for closing to work on a crossing, but our concern is the length of time of the closing and poor maintenance of the crossing.

It is our desire to have a better working relationship with the Railroad Officials and to cooperate in every way possible. We believe this can be done through communication and consideration for the needs of the Railroad and Texas County.

We believe our concerns are reasonable and legitimate and we thank you for the opportunity to express these concerns.

Sincerely,

Ray Depuy  
Texas County Commissioner
October 24, 1995

Ms. Judy Young
T. C. Adams, State Single Point of Contact
Texas Office of State-Federal Relations
P. O. Box 13005
Austin, TX 78711

RE: SAI# TX-R-95-09-29-0002-50-06

Dear Ms. Young:

The East Texas Council of Governments (ETCOG) has reviewed the application for the merger of the Union Pacific and Southern Pacific Railroads as submitted to the Interstate Commerce Commission (ICC). This merger will result in the abandonment of the Missouri Pacific Rail Line located within Smith County. The line to be abandoned extends approximately eight miles between the Cities of Whitehouse and Troup.

After consulting with the City Managers of both of the affected communities, ETCOG has determined that there will be no adverse economic consequences from the proposed abandonment. ETCOG also encourages both county and city officials to contact the Interagency Abandoned Rail Corridor Committee (IARCC) in Austin to consider other public uses of the corridor that would be compatible with the goals and objectives of the ETCOG Land Resource Management Plan.

Sincerely,

Glynn J. Knight
Executive Director

GJK/MWS/bc

cc: Commissioner Derrell Cooper, Smith County
    Mayor S. R. McCugh, City of Bullard
    Tom Smyser, City Manager, City of Whitehouse
    Jyl Moose, City Manager, City of Troup
    Julie Donsky, Environmental Scientist, Dames & Moore, Inc.
Ms. Julie Donsky
Environmental Scientist
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

I received your letter of September 26, 1995 requesting specific information for use in your preparation of an Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The information you requested is not of the type that the Office of the Attorney General keeps in the ordinary course of business or can provide to you directly. Instead, you need to contact the specific regulatory agencies within the state of Texas that have jurisdiction over the matters that you have noted in your letter. In Texas, those agencies are the Parks and Wildlife Commission, Andrew Sansom, Executive Director, 4200 Smith School Road, Austin, Texas 78744 and the Natural Resources Conservation Commission, Dan Pearson, Executive Director, 12100 Park 35 Circle, P. O. Box 13087, Austin, Texas 78711-3087.

Should you need any additional information from this office, after you contact the regulatory agencies in Texas, please do not hesitate to let me know.

Very truly yours,

Hal R. Ray, Jr.
Chief, Natural Resources Division
Ms. Julie Donsky  
Environmental Scientist  
Dames & Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

I received your letter of September 22, 1995 requesting specific information for use in your preparation of an Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The information you requested is not of the type that the Office of the Attorney General keeps in the ordinary course of business or can provide to you directly. Instead, you need to contact the specific regulatory agencies within the state of Texas that have jurisdiction over the matters that you have noted in your letter. In Texas, those agencies are the Parks and Wildlife Commission, Andrew Sansom, Executive Director, 4200 Smith School Road, Austin, Texas 78744 and the Natural Resources Conservation Commission, Dan Pearson, Executive Director, 12100 Park 35 Circle, P.O. Box 13087, Austin, Texas 78711-3087.

Should you need any additional information from this office, after you contact the regulatory agencies in Texas, please do not hesitate to let me know.

Very truly yours,

Hal R. Ray, Jr.  
Chief, Natural Resources Division
Applicant/Originating Agency: Dames & Moore  
Contact Name and Phone: Ms. Julie Donsky (E. Scientist) / (708) 223-0707

Project Title: EA-MERGER OF UNION PACIFIC & SOUTHERN PACIFIC RLRD

Funding Agency: ICC  
SAI/EIS#: TX-R-95-09-29-0002-50-00

Date Received: September 25, 1995  
Date Comments Due BPO: 11/06/95

Texas Attorney General's Office  
Texas Historical Commission  
Texas Parks and Wildlife Department  
Railroad Commission of Texas  
Texas Natural Resource Conservation Commission  
Brazos Valley Development Council  
East Texas Council of Governments  
Golden Crescent Regional Planning Commission  
Houston-Galveston Area Council

Special Notes/Comments: Subject application was provided to reviewers listed above per receipt of this notification by SPOC. Please contact the applicant above directly if you need more information.

[] No Comment.

Review Agency:  
Signature:  

Return Comments to:  

D. C. Adams, State Single Point of Contact  
Texas Office of State-Federal Relations  
P.O. Box 13005  
Austin, TX 78711  
(512) 463-1771
Texas Attorney General’s Office
Mr. Paul Elliott
Chief, Environmental Protection Div.
300 W. 15th Street, 10th Floor
Austin, Texas 78711

Texas Historical Commission
Dr. James Bruseth
TRACS Coordinator
1511 Colorado Street
Austin, Texas 78711

Texas Parks and Wildlife Department
Mr. Robert W. Spain, Chief
Habitat Assessment Branch
4200 Smith School Road
Austin, Texas 78744

Railroad Commission of Texas
Mr. Brian Schaible
Director, Office of Information Services
William B. Travis Building
Austin, Texas 78711

Texas Natural Resource Conservation Commission
Ms. Sidney Wheeler
Executive Director’s Office
P. O. Box 13087
Austin, Texas 78711-3087

Brazos Valley Development Council
Mr. Tom Wilkinson, Jr.
Executive Director
P.O. Drawer 4128
Bryan, Texas 77805-4128

East Texas Council of Governments
Mr. Glynn J. Knight
Executive Director
3800 Stone Road
Kilgore, Texas 75662

Golden Crescent Regional Planning Commission
Mr. Patrick J. Kennedy
Executive Director
P.O. Box 2028
Victoria, Texas 77902

Houston-Galveston Area Council
Ms. Rowena Ballas
Admin. Asst., Programs
P.O. Box 22777
Houston, Texas 77227
October 27, 1995

Ms. Julie Donsky, Environmental Specialist
Dames & Moore
One Continental Towers, 1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

Re: Environmental Report; Application for Merger of the Union Pacific and Southern Pacific Railroads

Dear Ms. Donsky:

Thank you for your letter of October 23, 1995 regarding the above referenced environmental report. In connection with the proposed activities within McLennan County, we hereby request the following:

Information concerning the impact of the proposed "Bellmead Project" on the 100 year flood plain. (Flood Insurance Rate Map # 480457-000JB indicates that a portion of the project lies within Zone A3.)

You may direct your response to McLennan County Engineer, Steve Hendrick, at the following address: McLennan County Engineer’s Office, P. O. Box 648, Waco, Texas 76703-0648.

Sincerely,

Jim Lewis
County Judge

JL/ls

cc: Steve Hendrick, County Engineer
Commissioner Fred Binner, Precinct 3
October 3, 1995

Julie Donsky  
Environmental Scientist  
Dames & Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

With regard to your request for response to the Union Pacific and Southern Pacific merger and the abandonment of the Little Mountain branch, we offer the following:

1. This branch crosses a County road known as 8700 South in the area of I-15. This crossing should be removed per County's approval.

2. We are unaware of any protected species.

3. Critical habitats within 5 miles would be upland birds, etc.

4. There is a State park in the area called South Willard Bay Marina.

We trust this will provide the information needed.

Respectfully,

R. Lee Allen, Chairman  
Box Elder County Commission

RLA:1r

0409
PERSONAL COMMUNICATIONS
ABANDONMENT PROJECTS
STATE

CALIFORNIA

Jenson, Bruce, Almeda Co. Planning Department, October 11, 1995. Personal communication regarding the Melrose to Magnolia abandonment site. It was noted that Almeda Co. has no comments on the proposed abandonment.

Kessler, Scott, Modoc County Planning Director, October 2, 1995. Personal communication regarding the Alturus to Wendel abandonment site. It was noted that the abandonment of this segment will adversely affect the economic base of the community because: (1) there is a full-service roundhouse in Alturus, (2) there would be a substantial loss of tax dollars to the area, and (3) this is the only rail line servicing the Lakeview Lumber Company in Lakeview, Oregon.

OREGON

Kelly, Mike, Dames & Moore, October 30, 1995. Personal communication regarding a record search. It was noted that a record search at Oregon SHPO was completed. One problem encountered was that there is no way to check for historic structures within a specific area because they are not mapped. The only way to know for sure is to physically check the areas of concern.

UTAH

Parous, Jim, State of Utah - Department of Environmental Quality of Weaver Co., October 17, 1995. Personal communication regarding the abandonment of the Little Mountain Branch rail segment. It was noted that there are several concerns regarding the closure of this segment, including: (1) the segment traverses numerous marshes which contain such habitat as falcons, and bald eagles, (2) the segment runs along a major waterway - the Willard Bay reservoir which would increase its load of sediment and therefore hurt animal life in that area, and (3) the segment runs next to salt evaporation ponds and the ballast material may contain slag that is lead.
ABANDONMENTS

PERSONAL COMMUNICATIONS

FEDERAL

Corrasa, Mary, U.S. Army Corps. of Engineers, November 3, 1995. Personal communication regarding the Little Mountain Branch abandonment site. Everything was noted to look correct.

Parrington, Jackie, New Orleans District Corps. of Engineers, October 23, 1995. Personal communication regarding the Lake Charles-Iowa Junction abandonment site. It was noted that it is likely that a permit will be needed and the Corp. should and will be contacted prior to abandonments that they have jurisdiction over (including wetlands and navigable waters).

Mauney, Morris, Corp. of Engineers, Memphis, TN, October 10, 1995. Personal communication regarding the Wheatley-W.Memphis abandonment site. It was noted that the section which crosses the St. Francis Floodway contains the fat pocketbook pearly mussels (protamalus capax) which is an endangered federally listed species. Personal communication regarding the Gurdon-Camden abandonment site. It was noted that in the Nevada/Oachita Counties there is the Poison Spring Wildlife Management Area (state area) which is located on the north end of the abandonment. Additionally, just south of the county border is the White Oak Lake State Park.

Harriman, Jim, BIA-EAO Environmental Coordinator, United States Department of the Interior, October 4, 1995. Personal communication regarding numerous abandonment sites. It was noted that the Bureau has no interests which will be impacted by the proposed abandonments.
SECTION A-3

RAIL SEGMENTS
SAMPLE LETTER TO AGENCIES

RAIL SEGMENTS
September 26, 1995

Mr. Mike Chiratti
Chief Projects Analyst
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Dear Mr. Chiratti:

Dames & Moore is preparing the Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The attached list and maps show merger rail segments, identified within your state, which may see an increase in rail activity (increase in the number of trains per day) due to the proposed merger. In some states there will also be construction which will occur as a result of the proposed merger. We will advise you if and when they are identified in your state.

To prepare our Environmental Report, we are requesting that you inform us of any concerns you have and provide information regarding:

- protected species information (State; Federal) within 5 miles of each site.
- listing of critical habitats within 5 miles of each site.
- locations of parks and refuges in proximity to the proposed projects.
- citations to any permitting/approval authority which you believe your state has over the actions identified.
- any other information you would like to provide regarding environmental matters or local concerns at these sites.

We would appreciate receiving the requested information at your earliest convenience. We would further appreciate it if the information could be supplied in writing or orally to the undersigned at the address and phone/fax numbers on this letterhead. The railroads will be filing our Environmental Report with their application to the Interstate Commerce Commission ("ICC") on or before December, and thus your prompt reply will ensure that our report, which the ICC will consider in preparing its own environmental assessment of the above-described project, includes consideration of your views.

We very much appreciate your assistance.

Very truly yours,

DAMES & MOORE, INC.

Julie Donsky
Environmental Scientist
CONTACT LIST

RAIL SEGMENTS
FEDERAL

U.S. ARMY CORPS OF ENGINEERS

U.S. Army Engineer District, Little Rock
P.O. Box 867
700 W. Capital
Little Rock, AR 72203-0867

U.S. Army Engineer District, Missouri River
P.O. Box 103, Downtown Station
Omaha, NE 68101-0103

U.S. Army Engineer Division, South Pacific
630 Sansome Street, Room 720
San Francisco, CA 94111-2206

U.S. Army Engineer District, Los Angeles
P.O. Box 2711
Los Angeles, CA 90053-2325

U.S. Army Engineer District, Missouri River
P.O. Box 103, Downtown Station
Omaha, NE 68101-0103

U.S. Army Engineer District, San Francisco
1325 "J" Street
San Francisco, CA 95814-2922

U.S. Army Engineer Division, Ohio River
P.O. Box 1159
Cincinnati, OH 45201-1159

U.S. Army Engineer District, Tulsa
1645 S. 101st East Ave
Tulsa, OK 74128

U.S. Army Engineer Division, North Central
111 N. Canal Street
Chicago, IL 60606-7206

U.S. Army Engineer Division, Portland
P.O. Box 2870
Portland, OR 97208-2870

U.S. Army Engineer District, Chicago
111 N. Canal Street, Suite 600
Chicago, IL 60606-7206

U.S. Army Engineer District, Portland
P.O. Box 2946
Portland, OR 97208-2946

U.S. Army Engineer District, Rock Island
P.O. Box 2004
Rock Island, IL 61204-2004

U.S. Army Engineer District, Memphis
B-202 Federal Building
167 N. Main Street
Memphis, TN 38103-1894

U.S. Army Engineer District, New Orleans
P.O. Box 60267
New Orleans, LA 70160-0267

U.S. Army Engineer Division, Southwestern
1114 Commerce Street
Dallas, TX 75242-0216
U.S. Army Engineer Division, Lower Miss Valley
P.O. Box 80
1400 Walnut Street
Vicksburg, MS 39181-0080

U.S. Army Engineer District, Vicksburg
3515 I-20-Frontage Road
Vicksburg, MS 39180-5191

U.S. Army Engineer District, Kansas City
700 Federal Building
Kansas City, MO 64106-2896

U.S. Army Engineer District, St. Louis
Regulatory Branch
1222 Spruce Street
St. Louis, MO 63103-2833

U.S. Army Engineer District, Galveston
P.O. Box 1229
Galveston, TX 77553-1229

U.S. Army Engineer District, Fort Worth
P.O. Box 17300
Fort Worth, TX 76102-0300

U.S. Army Engineer District, Seattle
P.O. Box 3755
Seattle, WA 98124-2255

U.S. Army Engineer District, Walla Walla
Building 602, City-County Airport
Walla Walla, WA 99362-9265

U.S. FISH AND WILDLIFE

U.S. FISH AND WILDLIFE SERVICE
Region 1
911 N.E. 11th Ave.
Portland, OR 97232-4181

U.S. FISH AND WILDLIFE SERVICE
Region 2
P.O. Box 1306
500 Gold Avenue, SW - Room 4000
Albuquerque, NM 87102

U.S. FISH AND WILDLIFE SERVICE
Region 3
One Federal Drive
Federal Building
Fort Snelling, MN 55111

U.S. FISH AND WILDLIFE SERVICE
Region 4
Richard B. Russell Federal Bldg., Rm. 1200
1875 Century Blvd., Ste. 200
Atlanta, GA 30345

U.S. FISH AND WILDLIFE SERVICE
Region 6
P.O. Box 25486
Denver Federal Center
Denver, CO 80225

0418
U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONAL OFFICES

USEPA
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

USEPA, Region 6
1st Interstate Bank Tower
at Fountain Place
1445 Ross Avenue, 12th Floor, Ste 1200
Dallas, TX 75202

USEPA
Region 7
726 Minnesota Ave.
Kansas City, KS 66101

USEPA
Region 8
999 18th St, Ste 500
Denver, CO 80202-2466

USEPA
Region 9
75 Hawthorne Street
San Francisco, CA 94105

USEPA
Region 10
1200 Sixth Avenue
Seattle, WA 98101

BUREAU OF INDIAN AFFAIRS

Walter Mills
Area Director
Bureau of Indian Affairs
P.O. Box 10
Phoenix, AZ 85001

Roger M. Jaeger
Area Director
Bureau of Indian Affairs
2800 Cottage Way
Sacramento, CA 95825-1846

Keith Beartusk
Bureau of Indian Affairs
316 N. 26th Street
Billings, MT 59101-1362

Patrick A. Hayes
Area Director
Bureau of Indian Affairs
P.O. Box 26567
Albuquerque, NM 87125-6567

Denise Homer
Area Director
Bureau of Indian Affairs
331 S. Second Avenue
Minneapolis, MN 55401-2241

Wilson Barber
Area Director
Bureau of Indian Affairs
P.O. Box 1060
Gallup, NM 87305

L.W. Bill Collier
Area Director
Bureau of Indian Affairs
W.C.D. Office Complex
P.O. Box 368
Anadarko, OK 73005-0368
Bill Collier  
Area Director  
Bureau of Indian Affairs  
101 N. 5th Street  
Muskogee, OK  74401-6206

Joe Walker  
Bureau of Indian Affairs  
115 Fourth Avenue SE  
Aberdeen, SD  57401

Nancy Jemison  
Acting Area Director  
Bureau of Indian Affairs  
3701 N. Fairfax Drive  
Mailstop VASQ 260  
Arlington, VA  22203

DIRECTOR OF THE NATIONAL PARK SERVICE

Roger Kennedy  
Director of National Park Service  
Main Interior  
1849 C Street NW  
Washington, DC  20240

STATE

ARIZONA

Arizona State Clearinghouse  
3800 N. Central Avenue, 14th Floor  
Phoenix, AZ  85012

Department of Environmental Quality  
3033 North Central Avenue  
Phoenix, AZ  85012

State Conservationist  
USDA Soil Conservation Service  
3003 N. Central Avenue, Suite 800  
Phoenix, AZ  85012-2945

Arizona State Parks  
1300 West Washington  
Phoenix, AZ  85007

Lupe Sanchez  
Yuma County Housing Director  
8540 W. Highway 95  
Somerton, AZ  85350

Jimmy Kerr  
Supervisor  
Pinal County  
820 E. Cottonwood Ln., Bidg. A  
Casa Grande, AZ  85222

Paul Marsh  
Chairman of the Board  
Pima County  
130 W. Congress, Floor 11  
Tucson, AZ  85701
ARKANSAS

Joseph Gillesbie
Manager State Clearinghouse
Office of Intergovernmental Service
Department of Finance
and Administration
P.O. Box 3278
Little Rock, AR  72203

Department of Arkansas Heritage
Arkansas Historic Preservation Program
The Heritage Center
323 Center Street, Ste 1500
Little Rock, AR  72201

Department of Pollution Control
and Ecology
P.O. Box 9583
Little Rock, AR  72219

State Conservationist
USDA Soil Conservation Service
5404 Federal Building
700 W. Capitol Avenue
Little Rock, AR  72201

Honorable Judge Roy C. Bearden
Craighead County
511 S. Union
Jonesboro, AR  72403

Honorable Judge Bill Craft
Poinsett County
401 Market St.
Harrisburg, AR  72432

County Judge
Woodruff County
500 N. 3rd
Augusta, AR  72006

Honorable Judge DeVore
Prairie County
P.O. Box 278
Des Arc, AR  72040

Honorable Judge Tom Catlett
Monore County
123 Madison
Clarendon, AR  72029

Honorable Judge David Lange
Greene County
P.O. Box 364
Paragould, AR  72450
Honorable Judge Sheldon Settlemoir
Clay County
P.O. Box 385
Piggott, AR 72454

CALIFORNIA

Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Environmental Protection Agency
555 Capitol Mall
Sacramento, CA 95814

State Conservationist
USDA Soil Conservation Service
2121-C Second Avenue
Davis, CA 95616-5475

Mark Oc'aplaine
California Coastal Commission
45 Fremont Street, Ste 2000
San Francisco, CA 94105-2219

Mike Chiratti
Chief Projects Analyst
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Sally Reed
Chief Administrative Officer
Los Angeles County
500 W. Temple Street
Los Angeles, CA 90012

Patrick O'Connell
Alameda County
1221 Oak Street
Oakland, CA 94612

George Barber
Chairman of the Board of Supervisors
San Joaquin Courthouse, Room 701
Stockton, CA 95202

Jane Dumston
Acting County Administrator
Yuba County
215 5th Street
Marysville, CA 95901

Larry Combs
Sutter County Administrator
1160 Civic Center Blvd.
Yuba City, CA 95993

Marsha Turoci
Chairperson of the Board
San Bernardino County
385 N. Arrowshead Avenue
San Bernardino, CA 92415-0110

Gerald Maloney
Clerk-Board of Supervisors
Riverside County
County Administrator Center
4080 Lemon St., Floor 14
Riverside, CA 92501-3655

Richard Inman
Imperial County
Board of Supervisor-Administration
940 Main Street, #208
El Centro, CA 92243
Ron Liehau  
Chairman of the Board of Supervisors  
Placer County  
175 Fulweiler Avenue  
Auburn, CA 95603

Shirley Marelli  
Chairman  
Tehama County  
P.O. Box 250  
Red Bluff, CA 6080

Chairman of the Board of Supervisors  
Sacramento County  
P.O. Box 839  
Sacramento, CA 95812-0839

Erwin Fust  
Chairman  
Shasta County  
1815 Yuba, Ste. 1  
Redding, CA 96001

Linda Terra  
Solano County  
580 Texas Street  
Fairfield, CA 94533

Ed McLaughlin  
Administration Office  
Butte County  
25 County Center Drive  
Oroville, CA 95965

Contra Costa County  
P.O. Box 911  
Martinez, CA 94553

Jerry McCaffrey  
Sierra County  
P.O. Drawer D  
Downieville, CA 95936

Karen Knecht  
Chairman of the Board  
Nevada County  
950 Maidu Avenue  
Nevada City, CA 95959-8617

Contra Costa County  
P.O. Box 911  
Martinez, CA 94553

Jerry Giardino  
Chairman of the Board  
Siskiyou County  
P.O. Box 338  
Yreka, CA 96097

COLORADO

State Single Point of Contact  
State Clearinghouse  
Division of Local Government  
1313 Sherman Street, Room 521  
Denver, CO 80203

Bill Vidal  
Executive Director  
Colorado Department of Transportation  
4201 E. Arkansas Avenue #262  
Denver, CO 80222
Colorado Historical Society  
1300 Broadway  
Denver, CO 80203  

Department of Natural Resources  
1313 Sherman Street, Room 718  
Denver, CO 80203-3528  

State Conservationist  
USDA Soil Conservation Service  
655 Parfet Street, E200C  
Lakewood, CO 80215-5517  

Gary D. Laura  
County Commissioner  
Jefferson County  
100 Jefferson County Parkway  
Golden, CO 80419  

James Johnson  
Chairman  
Eagle County  
P.O. Box 850  
Eagle, CO 81631  

Charlotte Heinz  
Chairperson  
Elbert County  
P.O. Box 597  
Kiowa, CO 80117  

Dick Norman  
Colorado Division of Wildlife  
6060 Broadway  
Denver, CO 80216  

Tommy Eggert  
Chairman  
Arapahoe County  
5334 S. Prince Street  
Littleton, CO 80166  

Stewart Macdonald  
State Parks  
1313 Sherman Street, Room 618  
Denver, CO 80203  

Charles R. Covington  
Chairman  
Lincoln County  
Hugo, CO 80821  

Dale Hall  
Chairperson  
Weld County  
P.O. Box 758  
Greenley, CO 80632  

Leroy Herndon  
Chairman  
Kit Carson County  
Burlington, CO 80807  

Mayor's Office  
Denver County  
City & County Building  
1427 Bannock, Room 350  
Denver, CO 80202  

Jim Disney  
Chairman of the Board of Commissioners  
Larimer County  
P.O. Box 1190  
Fort Collins, CO 80522  

Elaine Valente  
Chairperson  
Adams County  
450 S. 4th Street  
Brighton, CO 80601  

Ralph Knull  
Chairman of the Board of Commissioners  
Gilpin County  
P.O. Box 366  
Central City, CO 80427
Ron Stewart  
Chairman of the Board of Commissioners  
Boulder County  
P.O. Box 471  
Boulder, CO 80306

Paul J. Ohri  
Chairman of the Board of Commissioners  
Grand County  
P.O. Box 264  
Hot Sulphur Springs, CO 80451

Ron Hanley  
County Chairman  
Bureau County Courthouse  
700 S. Main  
Princeton, IL 61356

Richard Underwood  
Chairman of the County Board  
DeKalb County  
110 E. Sycamore  
Sycamore, IL 60178

Ron Conderman  
Chairman  
Lee County  
112 E. 2nd Street  
Dixon, IL 61021

Warren Krammerer  
Kane County  
719 E. Batavia Avenue  
Geneva, IL 60134

Jerry Davis  
Ogle County  
10880 W. Coffman  
Forreston, IL 61030
Tony Ardvini  
Chairman of the County Board  
Whiteside County Courthouse  
200 E. Knox Street  
Morrison, IL 61270  

-  
Gayle Franzen  
Dupage County Board  
421 N. County Farm Road  
Wheaton, IL 60187  

Cook County Clerks Office  
118 N. Clark  
Chicago, IL 60602  

Tom Nicholson  
Henry County  
11500 R. 250 Street  
Lynn Center, IL 61262  

Board of Commissioners  
Knox County  
200 S. Cherry  
Galesburg, IL 61401  

Max Call  
Vermilion County Board Chairman  
6 N. Vermilion  
Courthouse Annex  
Vermilion, IL 61832  

Dale Widholm  
Iroquois County  
Route 2, Box 26  
Clifton, IL 60927  

Dale Bateman  
Douglas County  
1901 W. Prairie Street  
Route 4, Box 160  
Tuscola, IL 61953  

Russell Thompson  
Chairman of the Board  
Kankakee County  
189 E. Court Street  
Kankakee, IL 60901  

Charles R. Adelman  
Chief Executive Officer  
Will County  
302 N. Chicago  
Joliet, IL 60431  

Lyle Shields  
Chairman  
Champaign County Board Members  
204 E. Elm  
Urbana, IL 61801  

IOWA  

Beth Foster  
R & C Coordinator  
State Historical Society of Iowa  
600 E. Locust Street  
Des Moines, IA 50319-0290  

Department of Natural Resources  
Wallace State Office Building  
Des Moines, IA 50319  

State Conservationist  
USDA Soil Conservation Service  
693 Federal Building  
210 Walnut Street  
Des Moines, IA 50309  

0426
Steven R. McCann  
Division for Community Progress  
Iowa Department of Economic Development  
200 East Grand Avenue  
Des Moines, IA 50309

Susan Bonham  
Auditor  
Harrison County  
113 N. 2nd Street  
Logan, IA 51546

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Chairman of the Board of Supervisors  
Cedar County  
400 Cedar Street  
Tipton, IA 52772

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Chairperson  
Linn County  
930 1st Street, SW  
Cedar Rapids, IA 52404

Dall Hanson  
Chairperson  
Benton County  
P.O. Box 549  
Vinton, IA 52349

Jill Davison  
Chairperson  
Clinton County Courthouse  
P.O. Box 2957  
Clinton, IA 52733-2957

Miriam Turnbull  
Chairperson  
Board of Supervisors  
Blackhawk County Courthouse  
316 E. 5th Street  
Waterloo, IA 50703

KANSAS

Department of Transportation  
Room 800 N  
Docking State Office Bldg.  
Topeka, KS 66612

Kansas Corporation Commission  
1500 SW Arrowhead Road  
Topeka, KS 66604

Kansas State Historical Society  
120 West 10th Street  
Topeka, KS 66612

Department of Health and Environment  
Division of Environment  
Landon State Office Building  
901 S.W. Jackson Street  
Topeka, KS 66612

State Conservationist  
USDA Soil Conservation Service  
760 South Broadway  
Salina, KS 67401

Dave Graversen  
City of Topeka Parks & Recreation  
Room 259, City Hall  
Topeka, KS 66603
Jimmy Perry  
Chairman  
Reno County  
206 W. First  
Hutchinson, KS 67501

Michael Myatt  
Chairman  
Clark County  
P.O. Box 886  
Ashland, KS 67831

Joe Sealey  
Chairman  
Seward County  
415 N. Washington, Ste. 111  
Liberal, KS 67901

Jim Williams  
Chairman  
Riley County  
110 Courthouse Plaza  
Manhattan, KS 66502

Manford Clark  
Chairman  
Kiowa County  
2111 E. Florida  
Greensburg, KS 67054

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Chairman  
Meade County  
P.O. Box 278  
Meade, KS 67864

Richard Carlson  
Chairman  
Pottawatomie County  
P.O. Box 187  
Westmoreland, KS 66549

Florence Whitebread  
Chairperson  
Geary County  
139 East 8th  
Junction City, KS 66441

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P.O. Box 687  
Newton, KS 67114

Steph Bickson  
County Clerk  
Ford County  
P.O. Box 458  
Bucklin, KS 67834

Alma Walker  
County Clerk  
Pratt County  
P.O. Box 885  
Pratt, KS 67124

LOUISIANA

Office of Cultural Development  
Dept. of Culture, Recreation and Tourism  
P.O. Box 44247  
Baton Rouge, LA 70804

Department of Environmental Quality  
P.O. Box 44066  
Baton Rouge, LA 70804
MISSOURI

Lois Pohl, Office of Administration
Federal Assistance Clearinghouse
Division of General Services
P.O. Box 809, Room 760,
Truman Building
Jefferson City, MO 65102

Office of Historic Preservation
205 Jefferson
P.O. Box 176
Jefferson City, MO 65102

Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

State Conservationist
USDA Soil Conservation Service
Parkade Center, Suite 250
601 Business Loop 70 W.
Columbia, MO 65203-2546

Norman Moore
Presiding Commissioner
Stoddard County
Box H
Bloomfield, MO 63825

Don Jones
Presiding Commissioner
Dunklin County
P.O. Box 188
Kennett, MO 63857

NEBRASKA

Nebraska Public Service Commission
P.O. Box 94927
Lincoln, NE 68509-4927

Nebraska State Historical Society
P.O. Box 82554
1500 "R" Street
Lincoln, NE 68501

Department of Environmental Control
P.O. Box 98922
Lincoln, NE 68509-8922

State Conservationist
USDA Soil Conservation Service
345 Federal Building
190 Centennial Mall N.
Lincoln, NE 68508-3866

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Chairman
Washington County
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Blair, NE 68008

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Chairman of the Board of Supervisors
Dodge County
435 N. Park
Fremont, NE 68025
NEVADA

Dana G. Strum
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Department of Administration
State Clearinghouse, Capitol Complex
209 East Musser, Room 204
Carson City, NV 89710

Division of Historic Preservation
and Archaeology
101 South Stewart Street
Capital Complex
Carson City, NV 89710

Department of Conservation and
Natural Resources
123 W. Nye Lane, Room 230
Carson City, NV 89710

State Conservationist
USDA Soil Conservation Service
5301 Longley Lane
Building F, Ste 201
Reno, NV 89511

Ron Schrempp
Chairman of the Board
Humboldt County Courthouse, Room 205
Winnemucca, NV 89445

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Chairman of the Board
Elko County
569 Court Street
Elko, NV 89801

Washoe County Clerks Office
Courthouse
Reno, NV 89501

Board of Commissioners
Lyon County
31 S. Main
Yerington, NV 89447

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Chairman of the Board of Commissioners
Storey County
P.O. Drawer D
Virginia City, NV 89440

Dave Auyoob
Chairman of the Board of Commissioners
Pershing County
P.O. Drawer E
Lovelock, NV 89419

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Chairman of the Board of Commissioners
Churchill County
10 W. Williams Avenue
Fallon, NV 89406
NEW MEXICO

Bob Peters
Single Point of Contact
State Budget Division, DFA
Room 190, Rataan Memorial Building
Santa Fe, NM 87503

Historic Preservation Division
Office of Cultural Affairs
Villa Rivera, Room 101
228 East Palace Avenue
Santa Fe, NM 87503

Department of Health and Environment
1190 St. Francis Drive
Santa Fe, NM 87503

State Conservationist
USDA Soil Conservation Service
517 Gold Avenue, N.W. Ste 3301
Albuquerque, NM 87102-3157

New Mexico Ecological Services
State Office
2105 Osuna NE
Albuquerque, NM 87113

New Mexico Department of Game & Fish
Villagra Building
Santa Fe, NM 87504

New Mexico Energy Minerals
& Natural Resources
Park & Recreation Division
408 Galisteo St., Villagra Building
Santa Fe, NM 87503

Luis Cardoza
County Manager
Grant County
P.O. Box 898
Silver City, NM 88062

Ken Miyagishima
Dona Ana County
County Commissioner-Chairman
180 W. Amador
Las Cruces, NM 88005

Lloyd Payne
County Chairman
Hidalgo County
300 Shakespeare
Animas, NM 88045

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P.O. Box 551
Deming, NM 88031

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Chairman
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Tucumcari, NM 88401

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Chairman
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Von, NM 88435

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Chairman
Torrance County
P.O. Box 48
Estancia, NM 87016

Mary Quintana
County Clerk
Otero County
1000 New York Avenue
Alamogordo, NM 88310
Martha Proctor  
County Clerk  
Lincoln County  
P.O. Box 338  
Carrizozo, NM 88301

OKLAHOMA

Department of Transportation  
200 NE 21st Street  
Oklahoma City, OK 73105-3204

Oklahoma Corporation Commission  
Jim Thorpe Building  
Oklahoma City, OK 73105

Oklahoma Historical Society  
2100 N. Lincoln Blvd.  
Oklahoma City, OK 73105

Department of Environmental Quality  
1000 NE 10th Street  
Oklahoma City, OK 73117

State Conservationist  
USDA Soil Conservation Service  
Agricultural Center Building  
100 USDA, Ste 203  
Stillwater, OK 74074

Ken Wall  
Chairman of the County Commissioners  
Jefferson County  
220 N. Main, Room 101  
Waurika, OK 73573

Ealmer Klippel  
Chairman of the Board  
of County Commissioners, Grady County  
4th and Choctaw  
Chickasha, OK 73018

Grant County Commissioners  
P.O. Box 167  
Medford, OK 73759

Charles Brandley  
Chairman of the Board of  
County Commissioners  
Canadian County  
201 N. Choctaw  
El Reno, OK 73036

Henry Senn  
Chairman of the Board of  
County Commissioners  
Kingfisher County  
101 S. Main, Room 3  
Kingfisher, OK 73750

Wendell Vencl  
Chairman of the Board of  
County Commissioners  
Garfield County Courthouse, Rm. 101  
Enid, OK 73701

Chairman of the Board of  
County Commissioners  
Texas County  
P.O. Box 197  
Guymon, OK 73942

Gary Ledford  
Chairman  
Stephen County Courthouse  
Duncan, OK 73533
OREGON

Department Of Transportation
State Transportation Bldg.
Salem, OR 97310

Oregon Public Utility Commission
300 Labor and Industries Bldg.
Salem, OR 97310

Department of Environmental Quality
811 S.W. 6th Avenue
Portland, OR 97204

State Conservationist
USDA Soil Conservation Service
1640 Federal Building
1220 S.W. 3rd Avenue
Portland, OR 97204

Coastal and Ocean
Program Management
Dept. of Land Conservation
and Development
800 N.E. Oregon Street #18
Portland, OR 97223

State Parks and Recreation Department
1115 Commercial Street, NE
Salem, OR 97310-1001

Betsy Williams
Dir. of Dept. of Environmental Srvs.
Multnomah County
2115 SE Morrison
Portland, OR 97214

John Mabrey
Chairman of the Board of Commissioners
Wasco County
511 Washington Street
The Dalles, OR 97058

Judy Hammersted
Board of County Commissioners
Clakamas County
906 Main Street
Oregon City, OR 97045

Cliff McMillan
Chairman of the Board
Klamath County
403 Pine
Klamath Falls, OR 97601

Ellie Dumdi
Chairperson of the Board
Lane County
125 E. 8th Avenue
Eugene, OR 97401

Mary Pearmaine
Chairperson
Marion County
100 High Street, NE
Salem, OR 97301

Honorable Judge Mike McArthur
Sherman County
P.O. Box 365
Moro, OR 97039

Honorable Judge Laura Pryor
Gilliam County
P.O. Box 427
Condon, OR 97823

Board of Commissioners
Hood River County
309 State Street, Room 107
Hood River, OR 97031
Richard Stach  
Chairman of the Board of Commissioners  
Linn County  
P.O. Box 100  
Albany, OR  97321

TEXAS

Tom Adams  
Governor's Office of Budget and Planning  
P.O. Box 12428  
Austin, TX  78711

Texas Historical Commission  
P.O. Box 12276, Capitol Station  
Austin, TX  78711

Environmental Protection Division  
P.O. Box 12548  
Austin, TX  78711-2548

State Conservationist  
USDA Soil Conservation Service  
Poage Federal Building  
101 S. Main Street  
Temple, TX  76501-7682

Andrew Sansom  
Executive Director  
Parks and Wildlife Commission  
4300 Smith School Road  
Austin, TX  78744

Dan Pearson  
Executive Director  
Natural Resources Conservation Commission  
12100 Park 35 Circle  
P.O. Box 13087  
Austin, TX  78711-3087

Judge Larry Craig  
Smith County  
Smith County Courthouse, Rm.304  
100 N. Broadway  
Tyler, TX  75702

Honorable Judge Charles W. Mattox  
El Paso County  
El Paso County Courthouse  
500 E. San Antonio, Ste. 301  
El Paso, TX  79901

Honorable Judge James Carlow  
Bowie County  
P.O. Box 248  
New Boston, TX  75570

Honorable Judge Cleve E. Steed  
Montague County  
P.O. Box 475  
Montague, TX  76251

Honorable Judge Tom Vandergriff  
Tarrant County  
100 E. Watherford  
Fort Worth, TX  76196-0101

Honorable Judge L.B. McDonald  
Wise County  
P.O. Box 393  
Decatur, TX  76234

0436
Honorable Judge White
Crane County
P.O. Box 457
Crane, TX 79731

Honorable Judge Peggy Robertson
Jeff Davis County
P.O. Box 1036
Fort Davis, TX 79734

Honorable Judge Vanoy Boozer
Morris County
500 Broadnax
Daingerfield, TX 75638

Preston Combest
Camp County
126 Church Street
Pittsburg, TX 75686

Honorable Judge Davenport
Martin County
P.O. Box 1330
Stanton, TX 79782

Honorable Judge James Peace
Hudspeth County
P.O. Box 68
Sierra Blanca, TX 79851

Honorable Judge Jack Aycock
Nolan County
100 E. 3rd Street
Sweetwater, TX 79556

Honorable Judge Ray Mayo
Mitchell County
349 Oak
Colorando City, TX 79512

Honorable Judge Ben Long
Parker County
One Courthouse Square
Weatherford, TX 76086

Honorable Judge Scott Bailey
Eastland County
P.O. Box 327
Eastland, TX 76448

Honorable Judge Bill Johnson
Callahan County
400 Market Street, Suite 200
Baird, TX 79504

Honorable Judge Lee Hamilton
Taylor County
300 Oak
Abilene, TX 79602

Honorable Judge Richard P. LeBlanc
Jefferson County
P.O. Box 4025
Beaumont, TX 77704

Honorable Judge Marshall Bennett
Fisher County
P.O. Box 306
Roby, TX 79543

Honorable Judge Carl Tibideaux
Orange County
801 Division, Room 207
Orange, TX 77630

Honorable Judge Ocie Westmoreland
Nacogdoches County
101 W. Main Street
Nacogdoches, TX 75961

Joe Berry
Angelina County
P.O. Box 908
Lafkin, TX 75902

Honorable Judge John G. Willy
Brazoria County
111 E. Locust
Angelton, TX 77515
Honorable Judge Loy Sneary  
Matagorda County  
1700 7th Street, Room 301  
Bay City, TX 77414

Honorable Judge Helen R. Walker  
Victoria County  
115 N. Bridge, Rm. 127  
Victoria, TX 77901

Honorable Judge Floyd Watson  
Shelby County  
200 St. Augustine  
P.O. Box 6  
Center, TX 75935

Honorable Judge Harrison Stafford II  
Jackson County  
115 W. Main  
Edna, TX 77957

UTAH

Carolyn Wright  
Utah State Clearinghouse  
Office of Planning and Budget  
Room 116 State Capitol  
Salt Lake City, UT 84114

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Weber County  
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Ogden, UT 84401

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Summit County  
P.O. Box 128  
Coalville, UT 84017

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Morgan County  
P.O. Box 886  
Morgan, UT 84050

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Davis County  
P.O. Box 618  
Farmington, UT 84025

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Chairman of the Board of Commissioners  
Juab County  
160 N. Main  
Nephi, UT 84648
Tex Olsen  
Chairman of the Board of Commissioners  
Millard County  
250 N. Main  
Richfield, UT 84701

Chairman of the Board of Commissioners  
Utah County  
100 E. Center  
Provo, UT 84606

Sarah Ann Skanchy  
Rich County  
170 N. Main  
Logan, UT 84321

WASHINGTON

Department of Transportation  
Transportation Bldg. NS-KF-01  
Olympia, WA 98504

King County Clerks Office  
516 3rd Seattle  
Seattle, WA 98028

Washington Utilities and Tptn. Commission  
1300 South Evergreen Park Drive, SW  
Olympia, WA 98504

John Taylor  
Chairman of the Board of Commissioners  
Cowlitz County  
207 4th North  
Kelso, WA 98626

Office of Archeology and Historic Preservation  
111 W. 21st Avenue, KL-11  
Olympia, WA 98504

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Chairman of the Board of Commissioners  
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MS: CMS01  
Chehalis, WA 98532-1900

Department of Ecology  
P.O. Box 47600  
Olympia, WA 98504-7600

County Council  
Pierce County  
930 Tacoma  
Tacoma, WA 98402

State Conservationist  
USDA Soil Conservation Service  
Rock Pointe Tower II  
316 Boone Avenue, Suite 450  
Spokane, WA 99201-2348

Board of Commissioners  
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P.O. Box 5000  
Vancouver, WA 98668-5000

Program Manager  
Shorelands and Coastal Zone Mgt. Program  
Department of Ecology  
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Olympia, WA 98504-7600
Judy Wilson  
Chairman of the Board of Commissioners  
Thurston County  
2006 Lakerich Drive, SW  
Olympia, WA 95502

WISCONSIN

William C. Carey, Section Chief  
Federal/State Relations Office  
IGA Relations, 6th Floor  
101 E. Wilson St., P.O. Box 7868  
Madison, WI 53707-7868

Historic Preservation Division  
State Historical Society of Wisconsin  
816 State Street  
Madison, WI 53706

Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707

State Conservationist  
USDA Soil Conservation Service  
6515 Watts Road, Ste 200  
Madison, WI 53719-2726

Coastal Policy Section  
Div of Energy & Intergovernmental Relation, 6th Floor, Department of Administration  
P.O. Box 7868, 101 E. Wilson  
Madison, WI 53707-7868

Wisconsin Department of Transportation  
James S. Thiel, General Counsel  
Office of General Counsel  
P.O. Box 7910, Room 115-B, HFSTB  
Madison, WI 53707-7910

Robert Jackson  
Chairman  
Milwaukee County  
901 N. 9th Street, Room 201  
Milwaukee, WI 53233

WYOMING

Sheryl Jeffries  
Single Point of Contact  
Wyoming State Clearinghouse  
State Planning Coordinator's Office  
State Capitol Building, Room 124  
Cheyenne, WY 82002

Wyoming State Historic Preservation Division  
4th Floor - Barrett Building  
2301 Central Avenue  
Cheyenne, WY 82002

0441
Department of Environmental Quality  
Herschler Building  
122 W. 25th Street  
Cheyenne, WY 82002

State Conservationist  
USDA Soil Conservation Service  
3124 Federal Building  
100 East "B" Street  
Casper, WY 82601

Nick Mirach  
Chairman of County Commissioners  
Laramie County  
309 W. 20th  
Cheyenne, WY 82001

Pat Gabriel  
Albany County  
Chairman of County Commissioners  
Albany County Courthouse  
Laramie, WY 82070

Kathy Davison  
Lincoln County  
P.O. Box 670  
Klemmerer, WY 83101

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Carbon County  
P.O. Box 6  
Rawlins, WY 82301

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Sweetwater County  
P.O. Box 730  
Green River, WY 82935

John G. Fanos  
Uinta County  
P.O. Box 810  
Evanston, WY 82931-0810
AGENCY RESPONSES

RAIL SEGMENTS
Ms. Julie Donsky  
Environmental Scientist  
Dames & Moore, Inc.  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

This is in reply to your October 4, 1995, letter requesting comments concerning the merger of Union Pacific and Southern Pacific Railroads.

The Corps of Engineers has jurisdiction over all waters of the United States. Excavation or discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (33 USC 1344). The implementing regulation for this Act is found at 33 CFR 320-330.

Should the proposed improvements require excavation or the discharge of dredged or fill material in any waters of the United States, including wetlands, a Department of the Army (DA) permit may be required. However, if the proposed improvements do not require excavation or the discharge of dredged or fill material in any waters of the United States, including wetlands, a DA permit will not be required.

We have assigned reference numbers to the three segments within our district's authority. Please reference these numbers should you have apply for Department of the Army authorization.

96-00114 Hutchinson, Ks to El Paso, Texas  
96-00115 Denver, Colorado to Topeka, Ks  
96-00116 Herington, Ks to Fort Worth, Texas
If there are any questions regarding wetlands being involved, enclosed is a list of individuals and firms available to conduct preliminary jurisdictional wetland determinations for submission to the Kansas City District Corps of Engineers for DA permit requirements.

Federal regulations require that a DA permit be issued by the Corps of Engineers prior to the initiation of any construction on the portion of a proposed activity which is within the Corps' regulatory jurisdiction.

Also, enclosed is a copy of our brochure entitled "Activities Requiring Permits."

If you have any questions concerning this matter, please feel free to write or call me at 816-426-5500 (FAX 816-426-2321).

Sincerely,

Chad Remley
Regulatory Project Manager
Regulatory Branch

Enclosures
Planning Division

Mrs. Julie Donsky  
Dames & Moore  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois, 60008

Dear Mrs. Donsky:

This is in response to your letter dated September 26, 1995, concerning the Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. It has been determined that the proposed project is not within the jurisdiction of the U.S. Army Corps of Engineers, Fort Worth District. Your letter has been forwarded to the Albuquerque District for review.

A map of the Regulatory Boundary for the Fort Worth District is enclosed for your information. If you have any questions concerning the review of your project, the Albuquerque District may be contacted at the following address:

U.S. Army Corps of Engineers, Albuquerque District  
Operations Division, CESWA-CO-R  
ATTN: Andy Rosenau  
P.O. Box 1580  
Albuquerque, New Mexico 87103-1580

We apologize for the inconvenience.

Sincerely,

Paul M. Hathorn  
Chief, Environmental Resources

Enclosure
October 10, 1995

Construction and Operations Division
Regulatory Branch

Ms. Julie Donsky
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

Reference is made to your letter dated September 26, 1995 regarding the Corps of Engineers' permitting authority as it relates to the Colton, California to El Paso, Texas rail segment which may see an increase in activity as a result of the proposed merger of the Union Pacific and Southern Pacific Railroads. (Action ID No. 1995 50152)

U.S. Army Engineer District, Albuquerque, has permitting authority pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act from the Arizona - New Mexico border to the eastern terminus of the rail segment.

We have studied the project description, other records, and documents available to us. The activity described, increased rail activity along an existing track, is not regulated under the provisions of either Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act and a Department of the Army permit will not be required. This determination was made because no excavation will occur in and no fill material will be placed into waters of the United States nor will any structures be placed in navigable waters of the United States. Some individual actions that may result from the increased usage, such as construction access, maintenance of certain structures or stream crossings may require permits.

Should you have any questions, please feel free to write or call me at (915) 568-1359.

Sincerely,

Daniel Malanchuk
Chief, El Paso Regulatory Office

0448
INFORMATION SHEET
Kansas City District, Corps of Engineers
Department of the Army Permit Program
STATE OF KANSAS
GENERAL INFORMATION

In addition to obtaining Corps of Engineers authorization, you also may need a permit from the Division of Water Resources, Kansas State Board of Agriculture. In order to determine if you will need this permit, please contact:

Division of Water Resources
Kansas State Board of Agriculture
901 South Kansas Avenue, Second Floor
Topeka, Kansas 66612-1253

Please request that a copy of their determination be sent to the Corps of Engineers. Also, you should furnish the Corps of Engineers a copy of the letter from you to the Division of Water Resources requesting the permit determination.

In addition, you should contact the Kansas Department of Wildlife and Parks, Route 2, Box 54A, Pratt, Kansas for a determination of whether a permit will be required in accordance with Kansas Statutes regarding projects affecting the habitat of Kansas listed threatened and endangered species.

PERMIT FEES

In accordance with the provisions of Federal regulations 33 CFR 320-330, all applicants are required to pay a fee for all permit for activities in waters of the United States. This fee must be paid prior to the issuance of a permit. However, the fee SHOULD NOT be submitted with the enclosed application. When the permit review has been completed and a determination has been made that the permit will be issued, applicants will be notified by mail to submit the fee to the Corps office.

DEFINITION OF FEES:

a. Commercial. A fee of $100 will be charged when the planned or ultimate purpose of the project is commercial or industrial in nature and is in support of operations that charge for the production, distribution, or sale of goods or services.

b. Noncommercial. A $10 fee will be charged for a permit application when the work is noncommercial in nature and provides personal benefits that have no connection with commercial enterprise.

REMEMBER

DO NOT SEND A FEE ALONG WITH YOUR APPLICATION

NOTE: It is no longer necessary to furnish a separate application to the Kansas Department of Health and Environment for State Water Quality Certification.

0449
October 27, 2005

Julie Donsky, Environmental Scientist  
Dames & Moore  
One Continental Towers  
1701 Golf Road, Ste. 1000  
Rolling Meadows. IL 60008

Dear Ms. Donsky:

After reviewing the merger plans of the Union Pacific and Southern Pacific Railroads in regards to a possible increase in rail traffic through Adams and Arapahoe Counties, we have the following results and concerns:

1. There are no protected species that we know of within the five mile radius of the site. For further information regarding endangered species and their habitat, contact the Fish & Wildlife Service at 303-236-7398.

2. Two dry creeks lie within the boundaries set. Comanche Creek and Wolf Creek. Again from our perspective these are not classified as critical habitat.

3. Housing developments, both planned and existing, are within the boundaries along with schools and parks in Bennett, Byers, Deer Trail, and Strasburg. We wonder about safety at crossings for vehicles and children along with the limited number of crossings available in case of emergencies. Finally, what about possible increased noise levels for the residents.

4. Other concerns we have involve the matter of weed control and grass management of the railroad right-of-way.

If you have further questions or need clarification, please contact the Byers NRCS Office at 303-822-5242.

Sincerely,

Eugene H. Backhaus  
Resource Conservationist

cc: Lee Hill, ASTC Environmental Quality
Ms. Julie Donsky  
Environmental Scientist  
Dames & Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008  

Dear Ms. Donsky:

We have reviewed the general routing of the Colton, California, to El Paso, Texas, segment of the Southern Pacific Railroad's line.

According to the map attached to your letter dated September 25, 1995, the area of interest terminates at El Paso, Texas; therefore, we have no comments on this proposed project.

Thank you for allowing us to review and comment on this project.

Sincerely,

[Signature]

FOR

HARRY W. ONETH
State Conservationist

cc: Al Leal, ASC for Field Operations, NRCS, Pecos  
October 10, 1995

Ms. Julie Donsky
Environmental Scientist
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

REQUESTED INFORMATION WITH RESPECT TO THE MERGER OF UNION PACIFIC AND SOUTHERN PACIFIC RAILROADS

On October 3, 1995, the U.S. EPA, Region IX forwarded your letter dated September 26, 1995 to the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) for comments. Your letter stated that an environmental report is proposed for the merger of Union Pacific and Southern Pacific railroads, and requested comments regarding concerns which may arise because of constructions and/or increase in rail activities between Colton, California and El Paso, Texas. Your letter also requested information regarding the environmental settings of the specified region affected by the merger.

DTSC, unfortunately, does not have the requested information regarding listing of critical habitats, protected species within 5 miles of the proposed project, or locations of parks and refuges in proximity of the proposed project. DTSC advises you to contact the California Department of Fish and Games at (916) 653-7664 as a possible source for these information within the State of California.

Since railroad construction, expansion or increase in rail activities in general are not related to hazardous waste management, a permit is not required by the DTSC. Our authorized responsibility is mainly to oversee and govern the handling and management of hazardous waste at storage, treatment, or disposal facilities. However, we are a responsible agency in accordance with the California Environmental Quality Act and will review environmental impact reports for projects which may have an adverse impact on human health or the environment. We request that you maintain the DTSC as a reviewing agency for the proposed environmental impact report and notify us immediately if the proposed project will involve the management or handling of hazardous waste.
Ms. Julie Donsky  
October 1 Q 1995  
Page 2

If you have any questions regarding this matter, please feel free to contact Mr. Aaron Yue at (310) 590-4897.

Sincerely,

[Signature]

Robert M. Senga,  
Unit Chief  
Facility Permitting Branch

cc: Ms. Carmen Santos  
U.S. Environmental Protection Agency  
Region IX, H-3-1  
75 Hawthorne Street  
San Francisco, California 94105

Mr. Mohinder S. Sandhu, P.E., Chief  
Facility Permitting Branch  
Region 4  
Department of Toxic Substances Control  
245 West Broadway, Suite 350  
Long Beach, California 90802

Ms. Pam Bennett, Director  
San Bernardino County  
Department of Environmental Health  
385 North Arrowhead Avenue  
San Bernardino, California 92415

Mr. John Fanning, Director  
Riverside County Department of Health  
Hazardous Material Management Program  
4065 County Circle Drive  
P.O. Box 7600  
Riverside, California 92513-7600

Mr. Thomas L. Wolf, Director  
Division of Environmental Health Services  
Imperial County  
939 Main Street  
El Centro, California 92243

Ms. Valerie Vilmer, Director  
Planning Department  
San Bernardino County  
385 North Arrowhead Avenue  
San Bernardino, California 92415-0182
cc:  Ms. Aleta Laurence, Director
     Planning Department
     Riverside County
     4080 Lemon Street, 9th Floor
     Riverside, California 92501

     Mr. Jurg Heuberger, Director
     Planning Department
     Imperial County
     939 Main Street
     El Centro, California 92243
Dames & Moore  
Julie Donsky, Environmental Scientist  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

Gerald Johnston of the California Protection Agency forwarded a copy of your letter of September 26, 1995, concerning a Public Records Act request one section of Southern Pacific Rail Line, Colton California to El Paso Texas. The Office of Environmental Health Hazard Assessment has not been involved in any activities concerning this track section and, therefore, has no documents, correspondence, memoranda, or reports on the subjects listed in your letter.

If you have any questions, please call me at (916) 324-2829.

Sincerely,

David M. Siegel, Ph.D., D.A.B.T, Chief  
Hazardous Waste Toxicology Section

cc: William F. SooHoo  
Chief Counsel
October 26, 1995

Ms. Julie Donsky
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008


Dear Ms. Donsky:

I am in receipt of your requests for documents under the California Public Records Act (Government Code §6250, et. seq.), which have been forwarded to me from our parent agency -- the California Environmental Protection Agency (Cal-EPA). All requests for public records made to Cal-EPA are forwarded to each of the individual Departments for review. Because of this, many of the requests we receive are not applicable to any documents which we maintain.

The information you have requested does not appear directed toward any records that may be maintained by the Department of Pesticide Regulation, as we do not compile records relating to any specific "sites."

If you are requesting any documents which you believe may be maintained by this Department, please specify the type of document so that we may process your request.

If I do not receive a response to this letter by November 21, 1995 will assume your request does not pertain to any records involving pesticides.

If you have any questions, please feel free to contact me.

Sincerely,

William J. Lenkeit
Staff Counsel (916) 324-2666
October 30, 1995

Dames & Moore
Julie Donsky
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Dear Ms. Donsky:

RE: Public Records Act Requests

We have received and reviewed your recent Public Records Act requests. It has been determined that the Air Resources Board does not have the information on Union Pacific and Southern Pacific Railroads that you are requesting.

Sincerely,

Jerry Martin
Information Officer
PERSONAL COMMUNICATIONS

RAIL SEGMENTS
NEW MEXICO

Finelly, Robert, New Mexico State Park and Recreation Division, October 31, 1995. Personal communication regarding various abandonment projects. It was noted that no environmental concerns which would be affected by the projects proposed.

OREGON

Kelly, Mike, Dames & Moore, October 30, 1995. Personal communication regarding a record search. It was noted that a record search at Oregon SHPO was completed. One problem encountered was that there is no way to check for historic structures within a specific area because they are not mapped. The only way to know for sure is to physically check the areas of concern.
SECTION A-4

RAIL YARDS
SAMPLE LETTER TO AGENCIES

RAIL YARDS
Mr. Mike Chiratti  
Chief Projects Analyst  
Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA  95814

Dear Mr. Chiratti:

Dames & Moore is preparing the Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The attached list and maps show rail yards, identified within your state, which may see an increase in rail activity (increase in the number of trains per day). In some states there will also be rail segments and intermodal and automotive facilities which will be affected by the proposed merger. We will advise you if and when they are identified in your state.

To prepare our Environmental Report, we are requesting that you inform us of any concerns you have and provide information regarding:

- protected species information (State; Federal) within 5 miles of each site.  
- listing of critical habitats within 5 miles of each site.  
- locations of parks and refuges in proximity to the proposed projects.  
- citations to any permitting/approval authority which you believe your state has over the actions identified.  
- any other information you would like to provide regarding environmental matters or local concerns at these sites.

We would appreciate receiving the requested information at your earliest convenience. We would further appreciate it if the information could be supplied in writing or orally to the undersigned at the address and phone/fax numbers on this letterhead. The railroads will be filing our Environmental Report with their application to the Interstate Commerce Commission ("ICC") on or before December, and thus your prompt reply will ensure that our report, which the ICC will consider in preparing its own environmental assessment of the above-described project, includes consideration of your views.

We very much appreciate your assistance.

Very truly yours,

DAMES & MOORE, INC.

Julie Donsky  
Environmental Scientist
CONTACT LIST
RAIL YARDS
USEPA  
Region 7  
726 Minnesota Avenue  
Kansas City, KS  66101  

USEPA  
Region 8  
999 18th Street, Suite 500  
Denver, CO  80202-2466  

USEPA  
Region 9  
75 Hawthorne Street  
San Francisco, CA  94105  

USEPA  
Region 10  
1200 Sixth Avenue  
Seattle, WA  98101  

BUREAU OF INDIAN AFFAIRS  

Walter Mills  
Area Director  
Bureau of Indian Affairs  
P.O. Box 10  
Phoenix, AZ  85001  

Ronald M. Jaeger  
Area Director  
Bureau of Indian Affairs  
2800 Cottage Way  
Sacramento, CA  95825-1846  

Patrick A. Hayes  
Area Director  
Bureau of Indian Affairs  
P.O. Box 26567  
Albuquerque, NM  87125-6567  

L.W. Bill Collier  
Area Director  
Bureau of Indian Affairs  
W.C.D. Office Complex  
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Anadarko, OK  73005-0368  

Stanley Speaks  
Area Director  
Bureau of Indian Affairs  
911 NE 11th Avenue  
Portland, OR  97232-4169  

Nancy Jemison  
Acting Area Director  
Bureau of Indian Affairs  
3701 N. Fairfax Drive  
Mailstop VASQ 260  
Arlington, VA  22203  

DIRECTOR OF THE NATIONAL PARK SERVICE  

Roger Kennedy  
Director of National Park Service  
Main Interior  
1849 C Street NW  
Washington, DC  20240
STATE

ARIZONA

Arizona State Clearinghouse
3800 North Central Avenue, 14th Floor
Phoenix, AZ 85012

Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

State Conservationist
USDA Soil Conservation Service
3003 North Central Avenue, Suite 800
Phoenix, AZ 85012-2945

Arizona State Parks
1300 West Washington
Phoenix, AZ 85007

Lupe Sanchez
Yuma County Housing Director
8540 W. Highway 95
Somerton, AZ 85350

Tom Rawles
Chairman of the Board - Supervisor
Maricopa County
301 W. Jefferson Street
Phoenix, AZ 85003

Delfina E. Bauch
Santa Cruz County
P.O. Box 1265
Nogales, AZ 85628

CALIFORNIA

Mike Chiratti
Chief Projects Analyst
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Environmental Protection Agency
555 Capitol Mall
Sacramento, CA 95814

State Conservationist
USDA Soil Conservation Service
2121-C Second Avenue
Davis, CA 95616-5475

Mark Delaplaine
California Coastal Commission
45 Fremont Street, Ste. 2000
San Francisco, CA 94105-2219

George Barber
Chairman of the Board of Supervisors
San Joaquin Courthouse, Room 701
Stockton, CA 95202

Ron Liehau
Chairman of the Board of Supervisors
Placer County
175 Fulweiler Avenue
Auburn, CA 95603
Marsha Turoci  
Chairperson of the Board  
San Bernardino County  
385 N. Arrowshead Avenue  
San Bernardino, CA 92415-0110

Contra Costa County  
P.O. Box 911  
Martinez, CA 94553  
Sally Reed, Chief Administrative Officer  
Los Angeles County  
500 W. Temple St.  
Los Angeles, CA 90012

COLORADO

State Single Point of Contact  
State Clearinghouse  
Division of Local Government  
1313 Sherman Street, Room 521  
Denver, CO 80203

Bill Vidal  
Executive Director  
Colorado Department of Transportation  
4201 E. Arkansas Avenue, #262  
Denver, CO 80222

Colorado Historical Society  
1300 Broadway  
Denver, CO 80203

Dick Norman  
Colorado Division of Wildlife  
6060 Broadway  
Denver, CO 80216

Richard Inman  
Board of Supervisors - Administration  
Imperial County  
940 Main Street, #208  
El Centro, CA 92243

Patrick O'Connell  
Alameda County  
1221 Oak St.  
Oakland, CA 94612

Linda Terra  
Solano County  
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Fairfield, CA 94533

Stewart Macdonald  
State Parks  
1313 Sherman Street, Room 618  
Denver, CO 80203

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Chairperson  
Adams County  
450 S. 4th Street  
Brighton, CO 80601

Dale Hall  
Chairperson  
Weld County  
P.O. Box 758  
Greeley, CO 80632

Board of Commissioners  
Mesa County  
P.O. Box 20000  
Grand Junction, CO 81502-5010
ILLINOIS

Steve Klokkenga  
State Single Point of Contact  
Office of the Governor, State of Illinois  
107 Stratton  
Springfield, IL 62706

Don Vonnahme, Director  
Department of Transportation  
Room 401 - Annex Building  
2300 South Dirksen Parkway  
Springfield, IL 62764

Illinois Historic Preservation Agency  
1 Old State Capitol Plaza  
Springfield, IL 62701-1512

Environmental Protection Agency  
P.O. Box 19276  
Springfield, IL 62794

State Conservationist  
USDA Soil Conservation Service  
1902 Fox Drive  
Champaign, IL 61820

Ralph Johnnie  
President of the Board  
Marion County  
P.O. Box 637  
Salem, IL 62881

Cook County Clerks Office  
118 N. Clark  
Chicago, IL 60602-13

KANSAS

Department of Transportation  
Room 800 N  
Docking State Office Bldg.  
Topeka, KS 66612

Kansas Corporation Commission  
1500 SW Arrowhead Road  
Topeka, KS 66604

Kansas State Historical Society  
120 West 10th Street  
Topeka, KS 66612

Department of Health and Environment  
Division of Environment  
Landon State Office Building  
901 S.W. Jackson Street  
Topeka, KS 66612

George Schlesener  
Chairman  
Dickinson County  
Court Abilene  
Abilene, KS 67410
LOUISIANA

Dept. of Transportation and Development
P.O. Box 94245
Baton Rouge, LA  70804-9245

Louisiana Public Service Commission
P.O. Box 91154
Baton Rouge, LA  70821-9154

Office of Cultural Development
Dept. of Culture, Recreation and Tourism
P.O. Box 44247
Baton Rouge, LA  70804

Department of Environmental Quality
P.O. Box 44066
Baton Rouge, LA  70804

State Conservationist
USDA Soil Conservation Service
3737 Government Street
Alexandria, LA  71302

Director
Costal Management Division
Department of Natural Resources
P.O. Box 44487
Baton Rouge, LA  70804-4487

Marc McMurry
Parish Administrator
Calcasieu Parish
P.O. Drawer 3287
Lake Charles, LA  70602

President Clement Guidroz
Pointe Coupee Police Jury
P.O. Box 290
New Roads, LA  70760

MISSOURI

Lois Pohl, Office of Administration
Federal Assistance Clearinghouse
Division of General Services
P.O. Box 809, Room 760 Truman Bldg.
Jefferson City, MO  65102

Office of Historic Preservation
205 Jefferson
P.O. Box 176
Jefferson City, MO  65102

Department of Natural Resources
P.O. Box 176
Jefferson City, MO  65102

State Conservationist
USDA Soil Conservation Service
Parkade Center, Suite 250
601 Business Loop 70 W.
Columbia, MO  65203-2546

Robert Manns
Presiding Commissioner
Butler County
Butler County Courthouse, Room 203
Poplar Bluff, MO  63901
OREGON

Department of Transportation
State Transportation Bldg.
Salem, OR 97310

Oregon Public Utility Commission
300 Labor and Industries Bldg.
Salem, OR 97310

State Parks and Recreation Department
1115 Commercial Street, NE
Salem, OR 97310-1001

Department of Environmental Quality
811 S.W. 6th Avenue
Portland, OR 97204

State Conservationist
USDA Soil Conservation Service
1640 Federal Building
1220 S.W. 3rd Avenue
Portland, OR 97204

Coastal and Ocean
Program Management
Dept. of Land Conservation
and Development
800 N.E. Oregon Street, #18
Portland, OR 97223

Mary Pearmine
Chairperson
Marion County
100 High Street NE
Salem, OR 97301

Board of Commissioners
Umatilla County
216 S.E. 4th Street
Pendleton, OR 97801

Board of Commissioners
Deschutes County
1130 N.W. Harriman
Bend, OR 97701

TEXAS

Tom Adams
Governor's Office of Budget and Planning
P.O. Box 12428
Austin, TX 78711

Texas Historical Commission
P.O. Box 12276, Capitol Station
Austin, TX 78711

Environmental Protection Division
P.O. Box 12548
Austin, TX 78711-2548

State Conservationist
USDA Soil Conservation Service
Poage Federal Building
101 S. Main Street
Temple, TX 76501-7682

Dan Pearson, Executive Director
Natural Resources Conservation
Commission
12100 Park 35 Circle
P.O. Box 13087
Austin, TX 78711-3087
Andrew Sansom  
Executive Director  
Parks and Wildlife Commission  
4300 Smith School Road  
Austin, TX  78744

Mark Sweeney  
East Texas Council of Governments  
3800 Stone Road  
Kilgore, TX  75662

Honorable Judge Jim Lewis  
McLennnen County  
P.O. Box 1728  
Waco, TX  76703

Honorable Judge Arthur Ware  
Potter County  
500 S. Filmore  
Amarillo, TX  79101

Honorable Judge Charles W. Mattox  
El Paso County  
500 E. San Antonio, Ste. 301  
County Courthouse  
El Paso, TX  79901

Honorable Judge Tom Vandergriff  
Tarrant County  
100 E. Watherford  
Fort Worth, TX  76196-0101

WASHINGTON

Department of Transportation  
Transportation Building  
NS-KF-01  
Olympia, WA  98504

Washington Utilities and  
Tptn. Commission  
1300 South Evergreen Park Drive, SW  
Olympia, WA  98504

Office of Archeology and  
Historic Preservation  
111 W. 21st Avenue, KL-11  
Olympia, WA  98504

Department of Ecology  
P.O. Box 47600  
Olympia, WA  98504-7600

State Conservationist  
USDA Soil Conservation Service  
Rock Pointe Tower II  
316 Boone Avenue, Suite 450  
Spokane, WA  99201-2348

Program Manager  
Shorelands and Costal Zone Mgt.  
Program  
Department of Ecology  
P.O. Box 47600  
Olympia, WA  98504-7600

King County Clerks Office  
516 3rd Seattle  
Seattle, WA  98028
AGENCY RESPONSES

RAIL YARDS
NO AGENCY RESPONSES RECEIVED TO DATE.
SECTION A-5

INTERMODAL AND AUTOMOTIVE FACILITIES
SAMPLE LETTER TO AGENCIES
INTERMODAL AND AUTOMOTIVE FACILITIES
Mr. Mike Chiratti  
Chief Projects Analyst  
Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814

Dear Mr. Chiratti:

Dames & Moore is preparing the Environmental Report for the application for merger of the Union Pacific and Southern Pacific Railroads. The attached list and maps show intermodal and automotive facilities, identified within your state, which may see an increase in truck activity (increase in the number of trucks entering and leaving the facility per day). In some states there will also be rail segments and rail yards which will be affected by the proposed merger. We will advise you if and when they are identified in your state.

To prepare our Environmental Report, we are requesting that you inform us of any concerns you have and provide information regarding:

• protected species information (State; Federal) within 5 miles of each site.
• listing of critical habitats within 5 miles of each site.
• locations of parks and refuges in proximity to the proposed projects.
• citations to any permitting/approval authority which you believe your state has over the actions identified.
• any other information you would like to provide regarding environmental matters or local concerns at these sites.

We would appreciate receiving the requested information at your earliest convenience. We would further appreciate it if the information could be supplied in writing or orally to the undersigned at the address and phone/fax numbers on this letterhead. The railroads will be filing our Environmental Report with their application to the Interstate Commerce Commission ("ICC") on or before December, and thus your prompt reply will ensure that our report, which the ICC will consider in preparing its own environmental assessment of the above-described project, includes consideration of your views.

We very much appreciate your assistance.

Very truly yours,
DAMES & MOORE, INC.

Julie Donsky
Environmental Scientist
CONTACT LIST

INTERMODAL AND AUTOMOTIVE FACILITIES
FEDERAL

U.S. ARMY CORPS OF ENGINEERS

U.S. Army Engineer Division,
South Pacific
630 Sansome Street, Room 720
San Francisco, CA 94111-2206

U.S. Army Engineer District, Los Angeles
P.O. Box 2711
Los Angeles, CA 90053-2325

U.S. Army Engineer District, Sacramento
Attention: Mary Corrasa
1325 "J" Street
Sacramento, CA 95814-2922

U.S. Army Engineer District, San Francisco
211 Main Street
San Francisco, CA 94105-1905

U.S. Army Engineer Division District,
North Central
111 N. Canal Street
Chicago, IL 60606-7206

U.S. Army Engineer District, Chicago
111 N. Canal Street, Ste 600
Chicago, IL 60606-7206

U.S. Army Engineer District, Rock Island
P.O. Box 2004
Rock Island, IL 61204-2004

U.S. Army Engineer Division, Lower Miss Valley
P.O. Box 80
1400 Walnut Street
Vicksburg, MS 39181-0080

U.S. Army Engineer District, Kansas City
700 Federal Building
Kansas City, MO 64106-2896

U.S. Army Engineer District, Missouri River
P.O. Box 103, Downtown Station
Omaha, NE 68101-0103

U.S. Army Engineer District, Portland
P.O. Box 2946
Portland, OR 97208-2946

U.S. Army Engineer Division, North Pacific
P.O. Box 2870
Portland, OR 97208-2870

U.S. Army Engineer District, Memphis
B-202 Federal Building
167 N. Main Street
Memphis, TN 38103-1894

U.S. Army Engineer Division, Southwestern
1114 Commerce Street
Dallas, TX 75242-0216

U.S. Army Engineer District, Fort Worth
Planning Department
P.O. Box 17300
Fort Worth, TX 76102-0300

U.S. Army Engineer District, Fort Worth
Regulatory Department
P.O. Box 17300
Ft. Worth, TX 75102-0300

U.S. Army Engineer District, Galveston
Planning Department
P.O. Box 1229
Galveston, TX 77553-1229
U.S. Army Engineer District, Galveston
Regulatory Department
P.O. Box 1229
Galveston, TX 77553-1229

U.S. Army Engineer District, Seattle
P.O. Box 3755
Seattle, WA 98124-2255

U.S. FISH AND WILDLIFE

U.S. FISH AND WILDLIFE SERVICE
Region 1
911 N.E. 11th Ave.
Portland, OR 97232-4181

U.S. FISH AND WILDLIFE SERVICE
Region 2
P.O. Box 1306
500 Gold Avenue, SW - Room 4000
Albuquerque, NM 87102

U.S. FISH AND WILDLIFE SERVICE
Region 3
One Federal Drive
Federal Building
Fort Snelling, MN 55111

U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONAL OFFICES

USEPA
Region 5
77 West Jackson Blvd.
Chicago, IL 60604

USEPA
Region 6
1st Interstate Bank Tower
at Fountain Place
1445 Ross Avenue, 12th Floor, Ste 1200
Dallas, TX 75202
USEPA
Region 7
726 Minnesota Ave.
Kansas City, KS 66101

USEPA
Region 8
999 18th St, Ste 500
Denver, CO 80202-2466

USEPA
Region 9
75 Hawthorne Street
San Francisco, CA 94105

USEPA
Region 10
1200 Sixth Ave.
Seattle, WA 98101

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Phoenix, AZ 85001

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Patrick A. Hayes, Area Director
Bureau of Indian Affairs
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Albuquerque, NM 87125-6567

Wilson Barber, Area Director
Bureau of Indian Affairs
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Gallup, NM 87305

L.W. Bill Collier, Area Director
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W.C.D. Office Complex
P.O. Bcx 368
Anadarko, OK 73005-0368

Stanley Speaks, Area Director
Bureau of Indian Affairs
911 NE 11th Avenue
Portland, OR 97232-4169

Nancy Jemison, Acting Area Director
Bureau of Indian Affairs
3701 N. Fairfax Drive
Mailstop vASQ 260
Arlington, VA 22203

DIRECTOR OF THE NATIONAL PARK SERVICE

Roger Kennedy
Director of National Park Service
Main Interior
1849 C Street NW
Washington, DC 20240
STATE

ARIZONA

Arizona State Clearinghouse
3800 N. Central Avenue, 14th Floor
Phoenix, AZ 85012

Arizona State Parks
1300 West Washington
Phoenix, AZ 85007

Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

State Conservationist
USDA Soil Conservation Service
3003 N. Central Avenue, Suite 800
Phoenix, AZ 85012-2945

Tom Rawles, Chairman of the Board-
Supervisor
Maricopa County
301 W. Jefferson Street
Phoenix, AZ 85003

ARKANSAS

Joseph Gillesbie, Mgr. State
Clearinghouse
Office of Intergovernmental Service
Department of Finance
and Administration
P.O. Box 3278
Little Rock, AR 72203

Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Department of Arkansas Heritage
Arkansas Historic Preservation Program
The Heritage Center
323 Center Street, Ste 1500
Little Rock, AR 72201

Department of Pollution Control
and Ecology
P.O. Box 9583
Little Rock, AR 72219

State Conservationist
USDA Soil Conservation Service
5404 Federal Building
700 W. Capitol Avenue
Little Rock, AR

The Honorable Judge Brian Williams —
Crittenden County
Crittenden County Courthouse
Marion, AR 72364
CALIFORNIA

Mike Chiratti
Chief Projects Analyst
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Environmental Protection Agency
555 Capitol Mall
Sacramento, CA 95814

State Conservationist
USDA Soil Conservation Service
2121-C Second Avenue
Davis, CA 95616-5475

Mark Delaplaine
California Coastal Commission
45 Fremont Street, Ste 2000
San Francisco, CA 94105-2219

Sally Reed, Chief Administrative Officer
Los Angeles County
500 W. Temple St.
Los Angeles, CA 90012

Patrick O'Connell
Alameda County
1221 Oak St.
Oakland, CA 94612

George Barber
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118 N. Clark  
Chicago, IL  60602-13

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Kansas Corporation Commission  
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Topeka, KS  66604

0485
| **Kansas State Historical Society**  
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|  
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|  
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|  
| **Dept. Of Transportation**  
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|  
| **Oregon Public Utility Commission**  
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|  
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| 811 S.W. 6th Avenue  
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| **State Conservationist**  
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|  
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| and Development  
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|  
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|  
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|  
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|  
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|  
|  
| 0486  

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King County Clerks Office
516 3rd Seattle
Seattle, WA  98028

0487
AGENCY RESPONSES

INTERMODAL AND AUTOMOTIVE FACILITIES
NO AGENCY RESPONSES RECEIVED TO DATE.
SECTION B

AIR QUALITY METHODOLOGY AND CALCULATIONS
AIR QUALITY METHODOLOGY AND CALCULATIONS

RAIL SEGMENTS

Operating data provided by UP/SP indicate that various rail line segments are expected to experience an increase in activity equal to or greater than the ICC thresholds of 8 trains/day or 100% of gross ton miles (as measured annually) in attainment areas, and 3 trains/day or 50% of gross ton miles in non-attainment areas (as measured annually). Air pollutant emission increases have been calculated for each Air Quality Control Region (AQCR) which includes a line segment.

The change in emissions for each rail line segment was calculated using the total gross ton increase expected on the segment and the length of each segment, as presented in Part 2. These values, when multiplied together, provide the gross ton mile increase for a particular rail line segment. Next, the total gallons of diesel fuel consumed for each segment were obtained by dividing this value by the fuel efficiency factor, as calculated for the combined system (i.e., 628 gross ton miles per gallon for an average diesel locomotive). The annual emission increases were estimated by multiplying the annual fuel consumption by emission factors. The emission factors for diesel powered locomotives (presented below) were provided by UP/SP and are based on the Booz, Allen, and Hamilton locomotive emission study. Locomotive emission factors (pounds per 1,000 gallons of diesel fuel consumed) are presented below:

- Hydrocarbons (HC) 22
- Carbon Monoxide (CO) 68.4
- Nitrogen Oxides (NOx) 512
- Sulfur Oxides (SOx) 37.1
- Particulate Matter (PM) 11.1

Calculated emissions are reported in tons of a given pollutant per year.
Each rail line segment travels through one or more AQCRs. The portion of track that lies within a particular AQCR was identified as a percentage of the total rail line segment length. The increase in emissions of a given pollutant from the entire rail line segment was multiplied by the appropriate percentage in order to determine the increase in emissions in a particular AQCR.

This methodology was employed for all pollutants of concern on every rail line segment that will experience an increase in activity equal to or greater than the thresholds discussed previously.

The following sample calculation for a sample rail line segment illustrates the emission estimation procedure:

\[
\begin{align*}
[700 \text{ miles (segment length)}] \times & \left[13.9 \times 10^6 \frac{\text{gross tons (increase)}}{\text{year}}\right] \\
& \times \left[\frac{\text{gallon}}{628 \text{ gross ton miles}}\right] = 15,493,631 \frac{\text{gallons}}{\text{year}}
\end{align*}
\]

\[
\begin{align*}
15,493,631 \frac{\text{gallons}}{\text{year}} \times & \left[0.022 \frac{\text{lb (HC)}}{\text{gallon}}\right] \times \left[\frac{1 \text{ ton}}{2000 \text{ lb}}\right] = 170.4 \frac{\text{tons (HC)}}{\text{year}}
\end{align*}
\]
RAIL YARDS

Operating data provided by UP/SP indicate that various rail yards which are expected to experience an increase in activity equal to or greater than the ICC thresholds of 100% carload activity in attainment areas and 20% carload activity in non-attainment areas. Air pollutant emission increases have been calculated for each AQCR that include these rail yards.

The increase in emissions for each rail yard was calculated first by dividing the daily increase in railcar activity by the system-wide average railcars switched per shift (i.e. assumed to be 150 railcars/shift). This result was then multiplied by the duration of a typical shift (8 hours) and then annual operation (365 days per year) to yield annual switch engine operating hours. The switch engine (locomotive) operating hours were then multiplied by the hourly diesel fuel consumption of 8.6 gallons per switch engine hour to provide the increase in annual diesel fuel consumption. Finally, the annual emission increases were estimated by multiplying the annual fuel consumption by emission factors. The emission factors for diesel powered locomotives (presented below) were provided by UP/SP and are based on the Booz, Allen, and Hamilton locomotive emission study. Locomotive emission factors (pounds per 1,000 gallons of diesel fuel consumed) are presented below:

<table>
<thead>
<tr>
<th>Emission Type</th>
<th>Factor (pounds per 1,000 gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons (HC)</td>
<td>22</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>68.4</td>
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<tr>
<td>Nitrogen Oxides (NOx)</td>
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<tr>
<td>Sulfur Oxides (SOx)</td>
<td>37.1</td>
</tr>
<tr>
<td>Particulate Matter (PM)</td>
<td>11.1</td>
</tr>
</tbody>
</table>

Calculated emissions for each rail yard assessed are reported in tons of a given pollutant per year, as presented in Part 3.
The following sample calculation for the Roseville, California railyard illustrates the emission estimation procedure:

\[
\frac{584.9 \text{ railcars (increase)}}{\text{day}} \times \frac{\text{switch engine shift}}{150 \text{ railcars}} \times \frac{8 \text{ hours}}{\text{shift}} \times 365 \frac{\text{days}}{\text{year}} \times 8.6 \frac{\text{gallons}}{\text{hour}} \times 0.512 \frac{\text{lb (NO}_x\text{)}}{\text{gallon}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} = 25.1 \text{ tons (NO}_x\text{)} \frac{\text{year}}{\text{}}
\]

**INTERMODAL FACILITIES**

Operating data provided by UP/SP indicate that various intermodal facilities which are expected to experience an increase in activity equal to or greater than the ICC thresholds of 10% truck traffic or 50 trucks/day for both attainment and non-attainment areas. Note, the assumption that 1.25 lift equates to 1 over-the-road truck was used for this analysis. Air pollutant emission increases have been calculated for each AQCR in which these intermodal facilities are located.

Emission increases from intermodal facilities will be associated with the following general types of sources:

* Over-the-road trucks;
* Lift equipment; and
* Yard trucks.

For over-the-road trucks, the increase in the number of trucks/day was multiplied by the average amount of time a truck is in the facility (assumed to be 25 minutes). The resultant daily truck operating hours was multiplied by 365 operating days per year to determine the annual truck operating hours. Next, the average truck fuel consumption rate (assumed to
be 2 gallons per hour) was multiplied by the annual truck operating hours to determine the annual fuel consumption. Lastly, the annual fuel consumption was multiplied by emission factors for trucks provided in "AP-42," USEPA, 1995. Heavy duty truck emission factors (pounds per 1,000 gallons of diesel fuel consumed) are presented below:

- Hydrocarbons (HC) 46
- Carbon Monoxide (CO) 215
- Nitrogen Oxides (NOx) 254
- Sulfur Oxides (SOx) 7
- Particulate Matter (PM) 45

Calculated emissions are then reported in tons of a given pollutant per year.

The following sample calculation for the over-the-road truck increases at the Roseville, California intermodal facility illustrates the emission estimation procedure:

\[
\frac{103 \text{ trucks (increase) }}{\text{day}} \times \frac{365 \text{ days}}{\text{year}} \times \left( \frac{35 \text{ minutes}}{\text{truck}} \times \frac{1 \text{ hour}}{60 \text{ minutes}} \times \frac{2.0 \text{ gallons}}{\text{hour}} \times \frac{0.046 \text{ lb (HC)}}{\text{gallon}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \right) = 1.01 \text{ tons (HC) year}^{-1}
\]

For purposes of emission estimation, all lift equipment at a facility was grouped and considered either a packer or a crane. The increase in annual fuel consumption was calculated using the total annual increase in units handled, dividing by the packer/crane operating rate of 17 units/hour, and multiplying by the average diesel consumption rate of 5.5 gal/hour. Finally, the annual emission increases were estimated by multiplying the annual fuel consumption by the emission factors for heavy duty trucks listed above.
The following sample calculation for the yard equipment increases at the Roseville, California intermodal yard illustrates the emission estimation procedure:

\[
\left[47,000 \frac{\text{units (increase)}}{\text{year}}\right] \times \left[\frac{1 \text{ hour}}{17 \text{ units}}\right] \times \left[5.5 \frac{\text{gallons}}{\text{hour}}\right] \times \left[0.254 \frac{\text{lb (NO}_x\text{)}}{\text{gallon}}\right] \times \left[\frac{1 \text{ ton}}{2000 \text{ lbs}}\right] = 1.93 \frac{\text{ton (NO}_x\text{)}}{\text{year}}
\]

Emission increases for each intermodal facility assessed are presented in Part 3.

For yard trucks, the increase in annual yard truck operating hours was calculated using the total annual increase in lifts (i.e. assuming 1 unit = 1 lift), dividing by the packer/crane operating rate of 17 lifts per crane/packer operating hour, and multiplying by the assumed ratio of 5 truck operating hours per crane/packer operating hour. The increase in truck operating hours was then multiplied by the average yard truck diesel consumption rate of 4.0 gal/hour. Finally, the annual emission increases were estimated by multiplying the annual fuel consumption by the emission factors for heavy duty trucks listed above.

The following sample calculation for the yard truck increases at the Roseville, California intermodal yard illustrates the emission estimation procedure:

\[
\left[47,000 \frac{\text{lifts (increase)}}{\text{year}}\right] \times \left[\frac{1 \text{ crane/packer hour}}{17 \text{ lifts}}\right] \times \left[5 \frac{\text{truck hours}}{\text{crane/packer hour}}\right] \times \left[4.0 \frac{\text{gallons}}{\text{truck hour}}\right] \times \left[0.254 \frac{\text{lb (NO}_x\text{)}}{\text{gallon}}\right] \times \left[\frac{1 \text{ ton}}{2000 \text{ lbs}}\right] = 7.02 \frac{\text{ton (NO}_x\text{)}}{\text{year}}
\]
Emission increases for each intermodal facility assessed are presented in Part 3.

AUTOMOBILE FACILITIES

Operating data provided by UP/SP indicate that automotive facilities which are expected to experience an increase in activity equal to or greater than the ICC thresholds of 10% truck traffic or 50 trucks/day for both attainment and non-attainment areas. Air pollutant emission increases have been calculated for each AQCR in which these facilities are located.

Emission increases from automotive terminals will be associated with the following general types of sources:

- Over-the-road trucks;
- Automobiles; and
- Portable ramps.

For estimation of emissions from over-the-road trucks, the increase in the number of trucks processed at an automotive facility per day was multiplied by the average amount of time a truck is in the facility (assumed to be 60 minutes). The resultant increase in daily truck operating hours was multiplied by 312 operating days per year to determine the annual-truck operating hours. Next, the average truck fuel consumption rate (assumed to be 2 gallons per hour) was multiplied by the annual truck operating hours to determine the annual fuel consumption. Lastly, the annual fuel consumption was multiplied by emission factors provided in "AP-42," USEPA, 1995. Heavy duty truck emission factors (pounds per 1,000 gallons of diesel fuel consumed) are presented below:

<table>
<thead>
<tr>
<th>Emission Factor</th>
<th>Value</th>
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<tr>
<td>Hydrocarbons (HC)</td>
<td>46</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>215</td>
</tr>
<tr>
<td>Nitrogen Oxides (NOₓ)</td>
<td>254</td>
</tr>
</tbody>
</table>
Sulfur Oxides (SO₂) 7
Particulate Matter (PM) 45

Calculated emissions are then reported in tons of a given pollutant per year.

The following sample calculation for the over-the-road truck increases at a sample automotive facility illustrates the emission estimation procedure:

\[
\left[ \frac{75 \text{ trucks}}{\text{day}} \right] \times \left[ \frac{312 \text{ days}}{\text{year}} \right] \times \left[ \frac{60 \text{ minutes}}{\text{truck}} \right] \times \left[ \frac{1 \text{ hour}}{60 \text{ minutes}} \right] \times \\
\left[ 2.0 \frac{\text{gallons}}{\text{hour}} \right] \times \left[ 0.046 \frac{\text{lb (HC)}}{\text{gallon}} \right] \times \left[ \frac{1 \text{ ton}}{2000 \text{ lb}} \right] = 1.08 \frac{\text{tons (HC)}}{\text{year}}
\]

Part 3 presents the emission increases for each automotive terminal assessed.

For estimation of emissions from automobiles, the increase in the number of automobiles moving through an automotive facility per day (i.e. assuming 8.5 automobiles per truck) was multiplied by the average amount of time an automobile engine is running while within a facility (assumed to be 5 minutes). The resultant daily automobile operating hours was multiplied by 312 operating days per year to determine the annual automobile operating hours. Lastly, the annual operating hours was multiplied by emission factors provided in "AP-42," USEPA, 1985. Gasoline engine emission factors (pounds per hour of engine operation assuming 5 miles/hour) are presented below:

- Hydrocarbons (HC) 0.0022
- Carbon Monoxide (CO) 0.0126
- Nitrogen Oxides (NOₓ) 0.0058

Calculated emissions are then reported in tons of a given pollutant per year.
The following sample calculation for the automobile increases at a sample automotive facility illustrates the emission estimation procedure:

\[
\left( \frac{75 \text{ trucks (increase)}}{\text{day}} \right) \times \left( \frac{8.5 \text{ automobiles}}{\text{truck}} \right) \times \left( \frac{5 \text{ minutes}}{\text{automobile}} \right) \\
\times \left( \frac{312 \text{ days}}{\text{year}} \right) \times \left( \frac{1 \text{ hour}}{60 \text{ minutes}} \right) \times \left( 0.0022 \frac{\text{lb (HC)}}{\text{hour}} \right) \\
\times \left( \frac{1 \text{ ton}}{2000 \text{ lbs}} \right) = 0.018 \frac{\text{tons (HC)}}{\text{year}}
\]

Part 3 presents the emission increase for each automotive terminal assessed.

For estimation of emissions from portable ramps, it is assumed that the average daily system-wide increase in operating time per ramp is 1 hour/ramp. The increase in annual hours of operation per facility was determined by multiplying the number of portable ramps at the automotive facility by 1 hour/ramp and 312 operating days per year. Lastly, the annual operating hours was multiplied by gasoline engine emission factors provided in "AP-42," USEPA, 1985. Gasoline engine emission factors (pounds per hour of engine operation assuming 5 miles/hour) are presented below:

- Hydrocarbons (HC): 0.0022
- Carbon Monoxide (CO): 0.0126
- Nitrogen Oxides (NOₓ): 0.0058

Calculated emissions are then reported in tons of a given pollutant per year.
The following sample calculation for the portable ramp increases at a sample automotive facility illustrates the emission estimation procedure:

\[
\left[ 5 \text{ portable ramps} \right] \times \left[ \frac{1 \text{ hour}}{\text{ramp - day}} \right] \times \left[ \frac{312 \text{ days}}{\text{year}} \right] \times \left[ 0.0022 \frac{\text{Vile}}{\text{hour}} \right] \times \left[ \frac{1 \text{ ton}}{2000 \text{ lbs}} \right] = 0.0017 \frac{\text{tons (HC)}}{\text{year}}
\]

Part 3 presents the emission increase for each automotive terminal assessed.

**ABANDONMENTS**

In connection with the proposed 17 rail line abandonments, a determination was made as to whether railcars diverted to trucks as a result of the abandonment would cause an increase in truck traffic of more than 10 percent of the average daily traffic or 50 vehicles a day on any affected road segment. The largest rail to truck diversions are anticipated to occur at Malta, Colorado where approximately 2000 trucks could be added to area road segments. Based on a five day per week operation, the increase to vehicular traffic would be fewer than 8 trucks per day, far below 10% of observed road traffic.

**AIR QUALITY CONTROL REGIONS**

Table B-1 depicts the various Air Quality Control Regions (AQCR) and the attainment status of each. The notation used to describe the attainment status of each AQCR is as follows:

- **A** = Attainment;
- **NA** = Non-attainment;
- **NAP** = Portion of AQCR is designated as non-attainment;
- **U** = Unclassifiable;

0500
CBC = Cannot be classified; and
"-" = No classification exists.

Note, for conservative purposes, if a portion of an AQCR is designated as non-attainment (i.e., NAP), the entire AQCR is considered non-attainment.

REFERENCES


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<tr>
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NA = Nonattainment (entire AQCR); A = Attainment; U = Unclassifiable; 0503 NAP = Nonattainment (portion of AQCR); CBC = Can’t Be Classified
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NA = Nonattainment (entire AQCR); U = Unclassifiable; A = Attainment; NAP = Nonattainment (portion of AQCR); CBC = Can't Be Classified
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**Oregon**

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| 191     | Eastern OR       | A   | A   | A   | NAP  | A   | A   | –  |
| 192     | Northwest OR     | A   | A   | A   | U    | A   | A   | –  |
| 193     | Portland (WA)    | A   | A   | NAP | NAP  | NAP | NAP | –  |
| 194     | Southwest OR     | A   | A   | NAP | NAP  | NAP | A   | –  |

**South Dakota**

| 205     | Black Hills-Rapid City | A   | A   | NAP | –    | A   | A   | –  |
| 86      | Metropolitan Sioux City (IA,NE) | A | A | A | – | A | A | – |
| 87      | Metropolitan Sioux Falls (IA) | A | A | A | – | A | A | – |
| 206     | South Dakota      | A   | A   | A   | –    | A  | A   | –  |

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| 211     | Amarillo-Lubbock     | A   | A   | A   | CBC  | A   | A   | –  |
| 212     | Austin-Waco          | A   | A   | A   | CBC  | A   | A   | –  |
| 213     | Brownsville-Laredo   | A   | A   | A   | CBC  | A   | A   | –  |
| 214     | Corpus Christi-Victoria | A | A | A | CBC | A | A | – |
| 153     | El Paso-Las Cruces-El Paso (NM) | A | A | A | NAP | NAP | NAP | – |
| 215     | Metropolitan Dallas-Ft Worth | A | A | A | CBC | A | NAP | NAP |
| 216     | Metropolitan Houston-Galveston | A | A | A | CBC | A | NAP | – |
| 217     | Metropolitan San Antonio | A   | A   | A   | CBC  | A   | A   | –  |
| 218     | Midland-Odessa-San Angelo | A   | A   | A   | CBC  | A   | A   | –  |
| 22      | Shreveport, Texarkana, Tyler (LA,OK,AR) | A | A | A | CBC | A | A | – |
| 106     | Southern Louisiana-Southeast TX (LA) | A | A | A | CBC | A | NAP | – |

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| 219     | Utah              | A   | A   | A   | –    | A   | A   | –  |
| 220     | Wasatch Front     | NAP | A   | NAP | NAP  | NAP | NAP | –  |

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NOISE METHODOLOGY AND CALCULATIONS

IMPACT THRESHOLDS

Noise impacts can occur at any location where consolidated operations will result in either a significant increase in the rail activities or new noise producing activities. The ICC regulations [Ref. 1] require an assessment of noise increases at all locations where the consolidated activities will exceed the air quality thresholds given in Table N-1.

Table N-1. Noise Impact Assessment Thresholds

<table>
<thead>
<tr>
<th>Any segment of rail line</th>
<th>Rail traffic increase of 100% as measured by gross tons annually or an increase of at least 8 trains/day</th>
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<td>Yard areas</td>
<td>100% increase in any activity (measured by carload activity)</td>
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<tr>
<td>Truck traffic</td>
<td>Increase greater than 10% of Average Annual Daily Traffic or 50 trucks per day on any affected road segment</td>
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The ICC regulations specify two thresholds of noise levels for locations where noise assessments are required:

1. An increase in community noise exposure as measured by the Day-Night Equivalent Sound Level (abbreviated L_{dn}) of 3 dBA or more.

2. L_{dn} of 65 dBA or greater.

The noise increase is to be quantified for all sensitive receptors (schools, libraries, hospitals, residences, retirement communities and nursing homes) that are in the project area where these thresholds will be surpassed.

In general, an increase in L_{dn} of 3 dBA will result from a 100% increase in rail traffic, a substantial change in operating conditions, changed equipment, or a shift of daytime operations to the nighttime hours. Nighttime noise often dominates L_{dn} because of a weighting factor added to nighttime noise to reflect most people being more sensitive to nighttime noise. In calculating L_{dn}, the nighttime adjustment makes one event, such as a
freight train passby, occurring between 10 p.m. to 7 a.m. equivalent to ten of the same events during the daytime hours.

Assuming a typical separation distance of 150 feet from the rail line to residences, an $L_{dn}$ level of 65 dBA from rail operations will usually require six or more trains per day. Near a grade crossing where the train whistles are sounded at full volume, six trains per day can cause $L_{dn}$ to exceed 65 dBA at distances greater than 500 feet from the tracks.

The overall goal of the noise study is to identify noise sensitive land uses where the change in operations could result in noise exposure increases that meet or exceed the ICC thresholds. This assessment provides an estimate of the number of noise-sensitive receptors where there will be a significant increase in noise exposure and the ICC thresholds will be exceeded. The noise impact assessment study is based on baseline and proposed activity level data provided by UP/SP using noise models previously developed by Harris Miller Miller & Hanson Inc. (HMMH) and available in the literature. Noise measurements have been performed in limited locations to supplement available data on noise from various sources related to railroad operations.

This study represents a noise impact "screening" in that potential for impact has been evaluated using the information available at the time of the study. Because noise from railroad operations tends to cause localized impacts, a detailed assessment of noise impacts requires careful consideration of factors such as the location of the noise sources relative to the receptors, the specific equipment that will be used, the number of daytime and nighttime operations, the operating modes of the equipment, and any acoustical shielding between the receptors and the noise sources.
Following is an outline of the approach that has been used for the assessment of potential noise impacts:

1. **Review available information and identify potential noise impacts.** This has included visits to some of the line segments and facilities where the largest changes in activities will occur, review of USGS maps and aerial photographs, and discussions with UP/SP personnel about operation of the facilities and their experience with community noise problems.

2. **Estimate existing noise levels.** In most cases the available data from previous HMMH rail projects and published literature have been used to characterize existing community noise near railroad facilities.

3. **Develop noise models.** Models for estimating noise have been defined for all of the potentially significant noise sources. This includes: freight and passenger train operations on line sections of track; audible warning signals at grade crossings; squeal noise from humping operations in switching yards; locomotive movements in rail yards; idling locomotives and refrigerator cars on stationary trains; and cranes lifting equipment on or off of freight cars. The models are based on available data from previous HMMH projects and the literature.

4. **Project existing and future noise exposure.** Information on the locations of noise sources, distances and propagation paths to sensitive receptors, and existing and future operation plans have been used to estimate noise exposure in terms of the Day-Night Equivalent Level (abbreviated $L_{dn}$ or DNL). Noise impact has been determined using the ICC criteria. Either noise contours have been drawn on USGS maps or clusters of residences or other sensitive receptors have been grouped together for a single noise projection instead of doing noise projections for each sensitive receptor. The final result of this analysis are estimates of the total number of sensitive
receptors where the proposed consolidation of UP and SP operations would be likely to increase noise exposure such that there would be impact according to the ICC criteria.

TYPES OF NOISE IMPACT

**Rail Line Segments**

The ICC Regulations specify that where an acoustical assessment is required, the analysis should determine for noise sensitive receptors whether the proposed action would result in a 3 dBA increase in noise exposure, as expressed by $L_{eq}$, or would result in $L_{dn}$ exceeding 65 dBA. There are some track segments where the ICC threshold for a noise study is exceeded, but the total change in noise exposure would be insignificant. The approach taken was to only look at areas where the projected increase in train volume would be expected to cause: (1) more than a marginal change in noise exposure, and (2) a significant increase in the number of noise sensitive receptors within the $L_{dn}, 65$ contour. For this study, any increase in $L_{eq}$ less than 2 dBA was considered insignificant. A 2 decibel threshold was selected because:

1. Near railroad facilities, a plus or minus 2 decibel variation in $L_{eq}$ is common because of the normal variation in factors such as: operating condition, operating procedures, weather, time of day, and equipment maintenance.

2. In most cases, a 2 decibel increase in noise exposure would cause only a small change (approximately 10%) in the number of residences within the $L_{dn}$ 65 contour. This is because noise impacts from train operations tend to be localized to the residences closest to the tracks. The acoustical shielding provided by the first row or two of residences is usually sufficient to keep noise exposure below $L_{dn}$ 65 at residences that are farther away.
3. The threshold of 2 decibels was considered appropriate since it only applies to neighborhoods where $L_{dn}$ would be 65 dBA or higher. $L_{dn}$ 65 represents a relatively noisy residential area.

Following is a summary of the procedures that have been used to estimate the number of noise sensitive land uses within the existing and future $L_{dn}$ 65 dBA contours:

1. Site investigations were performed to identify sensitive land uses and observe the railroad operating procedures.
2. The distances to $L_{dn}$ 65 dBA were calculated based on projected train operations for both line sections and grade crossing zones.
3. The distances were used to develop contours which were drawn on to USGS topographical maps.
4. The numbers of sensitive receptors within the 65 dBA contours were estimated. Adjustments were made to account for the effects of acoustic shielding by intervening buildings. The adjustments were based on the approach often used for highway noise projections [Ref. 5].

**Rail Yards and Intermodal Facilities**

Rail yards and intermodal facilities have a number of different sources of noise, including: locomotives moving rail cars, retarders, cranes or fork lifts used to load and unload flat cars, and trucks entering and exiting the facilities. As an initial approximation, the change in noise exposure that would be caused by these activities can be estimated using the following relationship:

\[
\text{Change in } L_{dn} = 10 \log(\text{future volume/existing volume})
\]

Although the land use in the immediate vicinity of each facility and the proximity to noise sources need to be considered, this scaling gives an indication of which facilities have the
potential of causing noise impacts. For most facilities the projected increase in noise exposure is relatively modest, indicating that increased noise impact would not be likely except in localized areas.

The general approach that has been used to evaluate potential noise impacts for rail yards and intermodal facilities where the projected activities exceed the ICC thresholds is:

1. Determine whether the projected change in activity is likely to cause a 2 dBA or greater change in $L_{an}$. If not, no additional noise study was performed.

2. Through review of maps and site visits, determine if there are any noise sensitive receptors in the vicinity of the installation. Many facilities are in industrial areas and have no noise sensitive land uses near by, which means that there will not be any noise impacts.

3. Estimate the existing and future $L_{an}$ levels for any noise sensitive land uses near the facility.

4. Estimate the number of sensitive receptors within the $L_{an}$ 65 dBA contour for existing and projected future volumes of activity or where $L_{an}$ will increase by at least 3 dBA. The counts were developed using USGS maps and information from site visits.

**Abandonment Projects**

In most cases, there will only be indirect negative noise impacts associated with the abandonment projects. Once a rail facility such as a line segment or yard is abandoned, any noise sensitive receptors living near the facility will experience a reduced level of noise exposure. Any negative noise impacts would be the result of moving the rail traffic or yard activities to another facility. These impacts are covered in the sections on operational and new construction impacts.
**Construction Projects**

Noise assessment from the planned construction projects has focused on the noise that would result from use of the facility once it is operational. Although most construction projects have the potential of causing intrusive noise at nearby noise sensitive land uses, the noise impact is for a limited duration. Construction noise does not create any permanent noise impacts. Most of the construction projects expected to occur as a result of the UP/SP merger would consist of construction activities that last for, at most, one to two months at any one location with noise during that period similar to that caused during normal track maintenance procedures.

For all of the construction projects, noise producing activities will be limited to daytime hours unless there are circumstances that require nighttime construction. At any locations where construction would continue for an extended period of time and could affect noise sensitive land uses, appropriate efforts will be made to see that: construction activities will be in compliance with local noise ordinances; equipment used on projects is kept in good working condition with effective mufflers installed; vehicles and construction equipment is restricted to construction areas and haul routes; and contractors select construction processes and techniques that minimize noise levels.

**Common Point Connections**

Most common point connections will involve construction or upgrading of connections between UP/SP mainline tracks. Specific noise projections have only been developed for connections that would be in relatively close proximity to residential or other noise sensitive land uses. In many cases the connections would be in isolated areas, rail yard areas, or industrial areas where there is very little potential for noise impact.
Where noise impact is possible, the existing noise exposure has been projected based on the average existing rail traffic on the connecting mainlines. The projections of future noise exposure include the noise from trains on the mainlines and the trains expected to use the connecting track.

**Corridor Upgrades**

Most of the corridor upgrades consist of extensions to sidings, new sidings, or adding double tracking. Noise from double tracks will be evaluated as part of the rail corridor analysis if the projected increase in rail traffic exceeds one of the ICC thresholds. In most cases, new sidings and expansion of existing sidings will have no noise impacts since the only additional noise from these sidings would be caused by idling locomotives and refrigerator cars while the trains are sitting on the siding tracks. The stationary trains would only affect land uses in the immediate vicinity of the sidings. In most cases, the noise from through trains on the mainline would still dominate the overall noise exposure.

Potential for noise impact has been evaluated only for sidings with residential or other noise sensitive land uses located within 200 feet of the siding. This screening distance is based on a worst case of trains occupying a siding for 300 minutes per day with the locomotives in the same position for 150 minutes per day. For the sidings where noise impacts are possible, noise projections have been developed based on best estimates of the average number of minutes that trains would use the siding each day, and the typical number of locomotives.

**Terminals, Intermodal Facilities and Auto Facilities**

There are a number of terminals (rail yards), intermodal facilities, and auto facilities where there new construction is proposed to increase capacity. For the facilities where the construction would constitute a significant new noise source at sensitive receptors or
cause an increase in activity that exceeds one of the ICC thresholds, the facility has been evaluated as discussed previously in Rail Yards and intermodal Facilities.

NOISE PROJECTION MODELS

This section describes the noise models used for this project. All of the models described in this section are common acoustic models defined in acoustics literature or have been used extensively on previous HMMH projects requiring analysis of freight train noise. Each model projects noise from a specific source, such as freight cars or a classification yard, based on a reference noise level derived from measurements, either measurements performed as part of this project, measurements performed as part of previous HMMH projects, or data available in the literature. Most of the available data on rail yards is from EPA sponsored studies that were performed 15 to 20 years ago. The loudest noise sources, such as squeal from hump yard retarders, have not substantially changed since these studies. Where equipment has changed, the change has generally been in the direction of lower noise emissions, which means that there could be cases where supplementing the available reference levels with newer data would reduce the projected noise exposure.

The noise models for through trains, grade crossings (including both train whistles and active warning devices at the grade crossing), idling trains, and rail yards are described below:

**Through Trains**

Noise from freight cars is caused by the steel wheels rolling on the steel rails. This is referred to as wheel/rail noise. The noise is dependent on train speed with noise level varying approximately as $30 \times \log_{10}$(speed). The noise levels can increase by as much as
15 dBA when wheels or rail are in poor condition. One of the most common problems on wheels is the formation of flats caused by wheels sliding under hard braking.

The main components of locomotive noise are: the exhaust of the diesel engines, cooling fans, general engine noise, and the wheel/rail interaction. Noise associated with the engine exhaust and cooling fans usually dominates; this noise is dependent on the throttle setting (most locomotives have eight throttle settings) and not on locomotive speed.

Tests have shown locomotive noise to change by about 2 dBA for each one step change in throttle setting. This means that noise levels increase by about 16 dBA as the locomotive throttle is moved from notch one to notch eight. Since locomotive engineers constantly adjust throttle setting as necessary, at best rough estimates of throttle settings are all that is usually available for noise projections. Numerous field measurements of freight train operations indicate that assuming a base condition of throttle position six and adjusting noise levels when better information about typical throttle position is known results in reasonably accurate projections of locomotive noise.

Given the $L_{\text{max}}$ of freight cars and a locomotive under a specific set of reference conditions, the noise models allow estimating $L_{\text{max}}$, SEL, $L_{dn}$, and other noise metrics for varying distance from the track, train speeds, and schedules. The standard approach to projecting freight car noise is to model freight cars as moving, incoherent, dipole line sources [Ref. 2,3]. The basic equations are:

\[
\begin{align*}
L_{\text{max}} &= K_c + 10\log(\alpha + 0.5*\sin(2\alpha)) - 10\log(y) - 10\log(s/s_{\text{ref}}) - c_g - c_s - c_{\alpha} \\
K_c &= L_{\text{max-ref}} - 10\log(\alpha_{\text{ref}} + 0.5*\sin(2\alpha_{\text{ref}})) - 10\log(y_{\text{ref}}) \\
SEL &= L_{\text{max}} + 10\log(\text{len}/v) - 10\log(2\alpha + \sin(2\alpha)) + 3.3
\end{align*}
\]
For locomotives, which can be modeled as moving monopole point sources, the corresponding equations are as follows:

\[
L_{\text{max}} = K_e + 10\log(2\alpha) - 10\log(y) + 10\log(s/s_{\text{ref}}) - c_g - c_s - c_a
\]  
(4)

\[
K_e = L_{\text{max-ref}} - 10\log(2\alpha_{\text{ref}}/y_{\text{ref}})
\]  
(5)

\[
\text{SEL} = L_{\text{max}} + 10\log(len/v) - 10\log(2\alpha) + 3.3
\]  
(6)

The parameters which apply to the equations above are:

- \(y\) = observer perpendicular distance from track centerline, feet
- \(y_{\text{ref}}\) = reference observer distance from track centerline, feet
- \(len\) = train length, feet
- \(len_{\text{ref}}\) = reference train length, feet
- \(\alpha\) = \(\tan^{-1}(len/2/y)\)
- \(\alpha_{\text{ref}}\) = \(\tan^{-1}(len_{\text{ref}}/2/y_{\text{ref}})\)
- \(s\) = train speed, feet/second
- \(s_{\text{ref}}\) = reference train speed, feet/second
- \(v\) = train speed, mph
- \(L_{\text{max}}\) = maximum sound level during train passby, dBA
- \(L_{\text{max-ref}}\) = maximum sound level during train passby with reference conditions, dBA
- \(c_g\) = excess ground attenuation, dBA
- \(c_s\) = excess air absorption, dBA
- \(c_a\) = excess shielding attenuation, dBA

The "standard train" for the consolidation analysis is 3-1/2 locomotives and 5000 feet of rail cars. Figure N-1 shows the \(L_{\text{dn}}\) levels as a function of distance from the near track for different number of trains per day at a train speed of 50 mph. For this calculation, it is assumed that trains are equally likely to occur any hour of the day, which means that on average 9 out of 24 trains will pass during the nighttime hours. This is critical since, in the calculation of \(L_{\text{dn}}\), one nighttime train is equivalent to ten daytime trains. Assuming that there would be no trains in the nighttime hours reduces the projected \(L_{\text{dn}}\) levels by over 6 decibels. Another important factor in Figure N-1 is that no excess attenuation from acoustic shielding is included. At distances beyond 100 feet or so, there are often
obstructions such as buildings or the terrain that act as a partial acoustic shield causing attenuation of 5 to 10 decibels.

Referring to Figure N-1, for a train speed of 50 mph, the distances to $L_{an}$ of 65 dBA as a function of the number of trains per day are:

<table>
<thead>
<tr>
<th>Average Number of trains per day</th>
<th>Distance to $L_{an} = 65$ dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50 ft</td>
</tr>
<tr>
<td>4</td>
<td>77 ft</td>
</tr>
<tr>
<td>8</td>
<td>116 ft</td>
</tr>
<tr>
<td>16</td>
<td>175 ft</td>
</tr>
</tbody>
</table>

Since the reference quantities used are based on numerous measurements of train noise, the curves in Figure N-1 and the distances given above are good representations of real field conditions. However, there are a number of factors that can affect levels of $L_{an}$. These include: a concentration of trains during the nighttime hours, locomotives operating at throttle settings higher than six, wheel or rail condition being worse than normal, or train whistles being sounded on a regular basis. Projecting noise exposure at grade crossings is discussed in the next section.
Figure N-1. Noise Exposure vs. Distance from Tracks

Freight Train Noise Exposure (Ldn)
Propagation Over Soft Ground

Distance to Near Track Centerline, ft

Ldn, dBA

16 Trains/Day
8 Trains/Day
4 Trains/Day
2 Trains/Day

Average train speed: 50 mph
Grade Crossings

Freight trains are required to sound their whistles before most at-grade rail-street crossings. The minimum sound level of the whistles at a distance of 100 feet in front of the locomotives is specified as 96 dBA by the FRA. In practice, the whistles on most freight and Amtrak trains generate maximum levels of 105 to 110 dBA 100 feet in front of the trains. The exact manner in which the whistles are sounded varies depending on local and state ordinances. Because of the high noise levels created by train whistles, noise exposure will be dominated by whistle noise near any grade crossing where sounding the whistles is required. Additional noise sources associated with grade crossings are the grade crossing bells that start sounding just before the gates are lowered and idling traffic that must wait at the crossing. This noise is usually insignificant in comparison to the whistle noise.

The key components in projecting noise exposure from whistle noise are the whistle sound level, the duration of the whistle noise, the distance of the receiver from the tracks, and the number of trains during the daytime and nighttime hours. FRA Regulation 229.129, "Audible warning device," requires all lead locomotives to have an audible warning device that produces a minimum sound level of 96 dBA at a distance 100 feet in front of the locomotive. Most freight train audible warning devices are air whistles or horns. The maximum sound level of the air whistles usually can be adjusted to some degree by adjusting the air pressure. Our experience is that maximum sound levels are 105 to 110 dBA at 100 feet in front of the trains, well above the 96 dBA required by the regulations.
To develop a realistic model of noise exposure from train whistles near grade crossings, we have used data collected as part of a previous HMMH project in Carrollton, TX near a Burlington Northern (BN) grade crossing. Two 24-hour measurement sites were approximately 200 to 300 feet from the grade crossing. All of the BN trains sounded their whistle as they approached the grade crossing. Since half of the trains passing the measurement site had already been through the grade crossing, only half of the trains were sounding the whistles as they passed the measurement sites. The maximum sound levels from the whistles averaged about 100 dBA at the measurement distances of just over 200 feet from the tracks. Normalized to a distance of 100 feet, the maximum sound level ranged from 105 to 110 dBA. The train whistles were the loudest noise in this area by a wide margin.

The average train SEL’s were used to develop the noise projection model. The average SEL (energy averaged) was 111 dBA normalized to a distance of 100 feet from the track centerline. Figure N-2 shows the projected noise exposure near grade crossings in terms of $L_{eq}$. The assumptions include: the whistles are sounded by all the trains in one direction, train speed is approximately 50 mph, the maximum whistle sound level is 105 to 110 dBA at 100 feet in front of the train, and the whistle noise attenuates at a rate of 4.5 decibels for each doubling of distance. A more detailed model of whistle noise would require detailed information about the geometry and operating conditions at each grade crossing, which was not possible for this project.
Figure N-2 shows the noise exposure near grade crossings as a function of distance from the tracks for different numbers of trains per day. Train passbys are assumed to be equally likely during the daytime and nighttime hours, which means that, on average, 9 out of 24 trains pass in the nighttime hours. Following is a comparison of the distances to the $L_{dn}$ 65 dBA contour with and without whistles:

<table>
<thead>
<tr>
<th>Average Number of trains per day</th>
<th>Distance to $L_{dn} = 65$ dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without whistles</td>
</tr>
<tr>
<td>2</td>
<td>50 ft</td>
</tr>
<tr>
<td>4</td>
<td>77 ft</td>
</tr>
<tr>
<td>8</td>
<td>116 ft</td>
</tr>
<tr>
<td>16</td>
<td>175 ft</td>
</tr>
</tbody>
</table>

These numbers show how important audible warnings at grade crossings can be in evaluating potential noise impacts from line-haul freight trains. Since the most common requirement is that train whistles be sounded starting 1/4 mile from a grade crossing, approximately 1/2 mile of track is affected at every grade crossing. Because the distance to impact increases by a factor of four to five times over that without grade crossings, the total area exposed to noise exceeding impact thresholds is much greater near grade crossings where whistles are sounded.
Figure N-2. Noise Exposure vs. Distance Near Grade Crossings

Noise Exposure Near Grade Crossings
Assuming No Acoustical Shielding

- 16 Trains/Day
- 8 Trains/Day
- 4 Trains/Day
- 2 Trains/Day

Average train speed: 50 mph
Nom Sound Level:
105-110 dBA @ 100 ft

Ldn, dBA

Distance to Near Track Centerline, ft
Railroad Yards

Noise from railroad yards was studied extensively in the 1970's by the EPA as part of their efforts to develop noise emission regulations for interstate rail carriers. The results and models developed in these studies were published in a background document in 1979 [Ref. 4]. Projections of rail yard noise for the UP/SP consolidation have been based on these models. The models allow calculating $L_{dn}$ for a variety of sources based on empirically-derived source noise levels, yard activity levels and distance. Models have been developed for the following yard noise sources:

- Inbound/Outbound Road-Haul and Local Train Operations
- Switch Engine Operations
- Retarders
- Car Impacts
- Idling Locomotives and Refrigeration Cars
- Locomotive Engine Load Tests
- Intermodal Yard Equipment

The three general equations used to calculate $L_{dn}$ at a given location are as follows:

$$L_{dn} = SEL + 10 \log_{10}(N_d + 10N_h) - 49.4 - 10 \log_{10}(D/100))^2 - k(D-100)$$  \hspace{1cm} (7)

$$L_{dn} = L_{max} + 10 \log_{10}(NH_d+10NH_h) - 13.8 - 20 \log_{10}(D/100) - k(D-100)$$  \hspace{1cm} (8)

$$L_{dn} = L_{max} + 10 \log_{10}(NH_d+10NH_h) - 13.8 - 20 \log_{10}(D/100) - k(D-100)$$

$$+ 8 \log_{10}(1.33N_h) + 10 \log_{10}(NR)$$  \hspace{1cm} (9)

Where:

- $SEL = Source Sound Exposure Level at 100 feet, dBA$
- $N_d = Number of daytime noise events (7 a.m. to 10 p.m.)$
\( N_n \) = Number of nighttime noise events (10 p.m. to 7 a.m.)

\( n \) = 1 for moving sources

\( = 2 \) for stationary sources

\( D \) = Distance from noise source, feet

\( k \) = Combined air/ground sound absorption coefficient, dBA/ft

\( L_{\text{max}} \) = Average maximum source noise level, dBA

\( NH_d \) = Number of hours of source operation during the daytime (7 a.m. to 10 p.m.)

\( NH_n \) = Number of hours of source operation during the nighttime (10 p.m. to 7 a.m.)

\( N_t \) = Number of noise sources per row

\( NR \) = Number of rows of noise sources

Equation 7 models moving or stationary transient point sources, Equation 8 is for stationary steady-state point sources, while Equation 9 is a truncated line source model applicable for groups of stationary point sources. A listing of the appropriate equations and input parameters for each of the rail yard noise sources is given in Table N-2, and more detailed modeling assumptions for each of these sources are described below.
### Table N-2. Modeling Parameters for Rail Yard Noise Projections

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Eqn. No.</th>
<th>Noise Level (dBA)</th>
<th>SEL</th>
<th>L_{max}</th>
<th>Basic Activity Level Parameters</th>
<th>n</th>
<th>k (dBA/ft)</th>
<th>Source Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train Operations</td>
<td>7</td>
<td>95</td>
<td>78</td>
<td></td>
<td># Trains/Day</td>
<td></td>
<td>0.0020</td>
<td></td>
</tr>
<tr>
<td>Hump Switch Engines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Switch Engines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hump Yard</td>
<td>7</td>
<td>95</td>
<td>78</td>
<td></td>
<td># of Cars Classified/Day</td>
<td></td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td>Flat Yard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retarders</td>
<td>7</td>
<td>108</td>
<td>111</td>
<td></td>
<td># of Cars Classified/Day</td>
<td></td>
<td>0.0100</td>
<td></td>
</tr>
<tr>
<td>Car Impacts</td>
<td>7</td>
<td>94</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
<td>0.0050</td>
<td></td>
</tr>
<tr>
<td>Idling Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locomotives</td>
<td>9</td>
<td>--</td>
<td>67</td>
<td></td>
<td># of Hours of Operation/Day</td>
<td></td>
<td>0.0025</td>
<td>2, 3</td>
</tr>
<tr>
<td>Refrigerator cars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locomotive Load Tests</td>
<td>8</td>
<td>--</td>
<td>78</td>
<td></td>
<td># of Hours of Operation/Day</td>
<td></td>
<td>0.0035</td>
<td>5, 4</td>
</tr>
<tr>
<td>Intermodal Yard Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cranes</td>
<td>8</td>
<td>--</td>
<td>81</td>
<td></td>
<td># of Hours of Operation/Day</td>
<td></td>
<td>0.0025</td>
<td></td>
</tr>
<tr>
<td>Trailer-mounted refrigerator units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inbound/Outbound Road-Haul and Local Train Operations**

These train operations are modeled as moving point sources at a speed of about 5 mph, dominated by locomotive engine noise. It is assumed that local and road haul trains are powered by one and three engines, respectively, and that the train arrivals and departures are uniformly distributed over the daytime and nighttime periods. Thus:

\[
N_a = (15/24)[(3)(# Road-Haul Trains/Day) + # Local Trains/Day] \quad \text{and} \quad N_n = (9/24)[(3)(# Road-Haul Trains/Day) + # Local Trains/Day]
\]

For modeling purposes, train operations are taken to be split between two locations, with inbound road-haul trains located in the receiving area of the yard and with outbound road-haul trains and local trains located in the departure area.
Switch Engine Operations

Switch engine operations are modeled as moving point sources which operate in the receiving and departure yards at a speed of about 4 mph, with operations uniformly distributed over the daytime and nighttime periods. For hump switch engine operations, located in the receiving yard, it is assumed that the average cui of cars to be humped contains 50 cars and that there are two engine passbys per humo operation. For other switch engine operations in hump yards, assumed to be located in the departure area, it is assumed that 10 cars are handled per switch engine and that there are two engine passbys per operation. For switch engine operations in flat yards, it is assumed that operations are split between two locations, one in the receiving yard and one in the departure yard, that 5 cars are handled per switch engine and that there are two passbys per operation. Thus:

\[ N_o = \frac{15}{24}(2/C)(\text{# of Cars Classified/Day}) \quad \text{and} \quad N_h = \frac{9}{24}(2/C)(\text{# of Cars Classified/Day}) \]

where: \( C \quad = \text{cars per switch operation} \)
\( = 50 \quad \text{for Hump Switch Engine Operations} \)
\( = 10 \quad \text{for Other Switch Operations in Hump Yards} \)
\( = 5 \quad \text{for Switch Engine Operations in Flat Yards} \)

Retarders

Retarders are modeled as grouped point sources located in the classification area of the yard, and it is assumed that retarder noise is uniformly distributed over the daytime and nighttime periods. Operable retarders, including master, group, intermediate and track retarders, are grouped at a single location at the geometric center of the retarders. For these, it is assumed that each car classified passes two retarders, on average, and that retarder squeal occurs about 50 percent of the time. For inert retarders, grouped at a
single point at the opposite end of the classification area, it is assumed that each car classified passes through one retarder, and that retarder squeal occurs about 85 percent of the time. Thus:

\[ N_d = \frac{15}{24}(F)(\text{# of Cars Classified/Day}) \]

\[ N_n = \frac{9}{24}(F)(\text{# of Cars Classified/Day}) \]

where: \( F = 1.0 \) for Master, Group, Intermediate and Track Retarders

\( = 0.85 \) for Inert Retarders

**Car Impacts**

Car impacts are modeled as stationary point sources, grouped at two locations in the classification area of the yard. It is assumed that the total number of car impacts is equal to about half of the number of cars classified per day, and that the impacts are distributed uniformly over the daytime and nighttime periods. Thus:

\[ N_d = \frac{15}{24}(0.5)(\text{# of Cars Classified/Day}) \]

\[ N_n = \frac{9}{24}(0.5)(\text{# of Cars Classified/Day}) \]

**Idling Locomotives and Refrigeration Cars**

Idling locomotives and refrigeration cars are modeled as grouped point sources located in the classification area of the yard, using a truncated line source model. \( L_{dn} \) is calculated using Equation 9 based on the hours of daytime (\( NH_d \)) and nighttime (\( NH_n \)) idling operation, assuming a prototypical arrangement of noise sources.

**Locomotive Engine Load Tests**

Load test cells are modeled as stationary point sources located in the classification area of the yard. Although 1979 EPA data suggest a noise source level (\( L_{max} \)) of 90 dBA at 100 feet, the present model assumes compliance with subsequent EPA Railroad Noise Emission Standards (40 CFR Part 201) which specify a maximum level of 78 dBA at 100 feet.
feet. Where specific information is unavailable, EPA suggests an assumption of 6 hours of testing per day, with $NH_d = 4$ hours and $NH_n = 2$ hours.

**Intermodal Yard Equipment**

The dominant noise sources at an intermodal facility include TOFC/COFC cranes and trailer-mounted refrigeration units, which are modeled as stationary point sources located in the intermodal yard area. The source noise levels given in Table N-2 are based on HMMH file data. $L_{en}$ is calculated using Equation 2, based on the number of units and the number of hours of daytime and nighttime operation. Thus:

$$NH_d = (# \text{ of units})(# \text{ of hours of operation during the day})$$

$$NH_n = (# \text{ of units})(# \text{ of hours of operation at night})$$

Off-site truck traffic noise is projected based on the FHWA Highway Traffic Noise Prediction Model [Ref. 5]. This model also includes shielding estimates that can be applied to all of the above rail yard noise sources.
REFERENCES

49 CFR 1105.7(e)


SECTION D

TRANSPORTATION METHODOLOGY
TRANSPORTATION METHODOLOGY

GENERAL OVERVIEW

The ICC regulations require a description of the effects of the proposed consolidation on regional or local transportation systems and patterns and an estimate of the amount of passenger or freight traffic which might be diverted to other transportation systems or modes. The primary transportation-related issues associated with the proposed consolidation of UP and SP systems will be the abandonment of 17 rail lines, the change in operations of intermodal and automotive facilities and the truck-to-rail diversions expected as a result of the merger.

Rail line abandonments generally result in rail-to-truck or rail-to-rail diversions of commodities. For this evaluation, rail-to-rail diversions (if any) are treated as no change in transportation impacts. Rail-to-truck diversions are described individually for each abandonment.

Increased or decreased truck traffic are the major impacts associated with operation of intermodal and automotive facilities 1) in the vicinity of the facility, and 2) on the regional highway network.

The impacts of truck-to-rail diversions are viewed on a systemwide basis, as representing a shift in long-distance hauls from truck to rail with the associated benefits to the interstate highway system, energy consumption, and air emissions.

Therefore, transportation analyses were conducted for the following components of the UP/SP merger:

- Rail-line abandonments (see Part 4);
- Changes in operation of intermodal and automotive facilities (see Part 3); and,
RAIL LINE ABANDONMENTS

Based on 1994 carload shipment data provided by UP and SP, rail-to-truck diversions from rail line abandonments will not meet ICC thresholds triggering a calculation of energy consumption changes. These ICC thresholds are as follows: if the proposed action will cause diversions from rail to motor carriage of more than: 1) 1,000 rail carloads a year, or 2) an average of 50 rail carloads per mile per year for any part of the affected line, then an analysis would need to be completed. Therefore, truck traffic increases were not quantified. Impacts to regional transportation networks are anticipated to be insignificant according to data on annual carloads and the locations of shippers along the 17 abandoned lines.

INTERMODAL AND AUTOMOTIVE FACILITIES

The analysis of potential changes to intermodal and automotive facility operations were based on truck-to-rail diversion studies conducted by Reebie and Associates (1995) and Transmode (1995), intermodal to intermodal diversions, expected facility consolidation impacts and the effects of the BN/Santa Fe merger. These merger-related conditions formed the basis of an analysis of potential changes to local and regional truck traffic volumes in the vicinity of intermodal and automotive facilities.

For intermodal facilities, truck traffic volume changes were assumed to be directly correlated to the change in the number of "lifts" predicted to occur at each intermodal facility, each lift representing one intermodal container lifted onto or off of a rail car. The analysis assumed that each increase or decrease of 1.25 lifts represents a corresponding increase or decrease of 1 truck. The ratio of 1.25 lifts to 1 truck means that approximately 20 percent of trucks enter and leave an intermodal facility fully loaded, while approximately
80 percent of trucks enter the facility loaded and leave empty or enter the facility empty and leave loaded. Each additional truck corresponds to two truck trips that would be added to the Average Daily Traffic (ADT) volume of the local roadway network.

For locations in which the existing UP and SP intermodal hubs are to be consolidated at one facility, the activity at the facility to be closed was added to that of the consolidation hub. Yearly estimates of total intermodal units, provided by UP and SP, were divided by 365 to obtain an average daily estimate, since intermodal facilities generally operate 7 days per week, 24 hours per day. Trucks may (and do) enter facilities at any time, independent of train schedules, to drop off or pick up containers from parking lot areas.

The analysis of potential merger-related changes at automotive facilities utilized a methodology similar to that used for the intermodal facilities, except that the automotive facility analysis was based on predicted changes in rail car activity at the automotive facility. Post-merger estimates of automotive railcar activity were provided by UP and SP. Railcar activity at hubs expected to close as a result of the merger was added to the activity estimates at the consolidation sites.

An assumption of 10 vehicles per railcar and 8.4 vehicles per truck were applied to the railcar estimates to obtain yearly estimates of truck increases or decreases at each automotive facility. Daily estimates of truck traffic increases or decreases were obtained by dividing the yearly estimate by 312, since the automotive facilities typically operate 6 days per week, 24 hours per day. As with the intermodal facilities, trucks may enter the automotive facility at any time, independent of train schedules, to drop off or pick up automobiles from parking lot areas.
For all intermodal and automotive facilities, UP and SP personnel developed predicted increases or decreases in activity.

**LOCAL TRANSPORTATION IMPACTS**

Impacts on ADT volumes were calculated (where ADT data were available) by adding the additional truck-trips per day to the ADT on local access routes to intermodal and automotive facilities. Access routes were identified from published UP and SP sources, developed as directions to truck drivers.

**REGIONAL TRANSPORTATION IMPACTS**

Regional transportation effects were evaluated based on the opportunities to consolidate intermodal and automotive facilities within a geographic area. Where facilities will be combined, it was assumed that regional transportation impacts would remain the same, if not reduced to some extent (10 to 15 percent according to UP/SP personnel) by truck travel between the two facilities, known as "rubber tire" traffic.

If significant truck-to-rail diversions would occur at a given facility without offsetting decreases at another facility in the region, increased impacts were assumed.

**TRUCK-TO-RAIL DIVERGIONS**

System-wide impacts to the national transportation network were estimated based on the truck diversion study conducted by Reebie Associates and Transmode. This study evaluated the number of truck loads of traffic that will, as a result of the UP/SP merger, be diverted from long-distance truck haul to rail transport. Origin-destination data provided in this study were used to estimate truck miles saved as a result of diversions to intermodal and automotive transport.
REFERENCES


Dames & Moore has received data from appropriate UP and SP officials which was used in the preparation of this report.
SECTION E

SAFETY METHODOLOGY AND CALCULATIONS
SAFETY

GENERAL

The Operating Plan indicates that rail connections will be constructed at strategic locations to improve operating efficiencies. These connections are listed in the descriptions of new construction in Part 5. The plans for these connections were reviewed to determine if the connections would require the construction of grade crossings. UP/SP state that none of the construction projects associated with the merger involve crossing a road for the first time. Therefore, it is anticipated that there would not be significant adverse affects on safety as a result of new grade crossings.

HAZARDOUS WASTE METHODOLOGY

Information from UP/SP was reviewed regarding known hazardous waste sites near the lines designated for abandonment. Information was reviewed from several federal and state environmental databases through VISTA Environmental Information Inc. (VISTA) to assess if activities on or adjacent to the rail segment (within 500 feet) would potentially threaten the environmental quality of the rail segments to be abandoned. The list of databases are described below. It should be noted that this information is reported as received from VISTA, which reports information as it is provided in various government databases. It is not possible for UP/SP to verify the accuracy or completeness of information contained in these databases. The use of and reliance on this information is a generally accepted practice in the conduct of environmental due diligence.
• **Federal NPL List**
The EPA's National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites was reviewed for sites within 500 feet of the rail segment. To appear on the NPL, sites must have met or surpassed a predetermined hazard ranking system score, been chosen as a state's top priority site, pose a significant health or environmental threat, or be a site where the EPA has determined that remedial action is more cost-effective than removal action.

• **Federal CERCLIS List**
The EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) listings were reviewed to determine if sites within 500 feet of the rail segment are listed for investigation. The CERCLIS database identifies hazardous waste sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment.

• **Federal RCRA TSD List**
The current RCRA Notifiers List was reviewed to assess if any RCRA treatment, storage, or disposal sites (TSDs) are within 500 feet of the rail segment.

• **Federal ERNS List**
The EPA's Emergency Response Notification System (ERNS) list, which contains reported spill records of oil and hazardous substances, was reviewed to identify ERNS sites within 500 feet of the rail segment.

• **State Priority List (Hazardous Waste and Land-Based Disposal Sites)**
The State Priority List (SPL) inventory, details sites included in the inventory of active and historical waste disposal sites, and sites scheduled for investigation or
remediation. The State inventory of solid waste facilities (SWLF) includes current and historical solid waste landfill sites and solid waste facilities which have permit applications on file. The SPL and or SWLF lists were reviewed to assess if SPL or SWLF sites are within 500 feet of the rail segment.

- **State Leaking LUST Sites**
  The State inventory of leaking underground storage tanks (LUST) was reviewed to assess if there are LUST sites within 500 feet of the rail segment.

- **Other Information** (Unmappable Database Sites)
  The Orphan or Unmappable Sites were reviewed, which are sites that have not been geocoded by VISTA based on lack of sufficient data regarding their exact location within the general area. Information regarding the unmappable sites was reviewed in an effort to identify locations where the unmappable sites may have impacted the rail segment.
SECTION F

ENERGY ANALYSIS
ENERGY ANALYSIS

The energy impact analysis focused on potential changes in fuel consumption from merger-related truck to rail diversions, using the following assumptions:

- Average number of intermodal containers per railcar = 1.8
- Average number of intermodal railcars per train = 50
- Average number of locomotives per train = 3.5
- Average weight of loaded intermodal railcar = 60 tons
- Average weight of locomotive = 200 tons
- Average truck weight = 40 tons
- For rail, a fuel efficiency of 628 gross ton-miles per gallon diesel fuel
- For trucks, a fuel efficiency of 140 gross ton-miles per gallon of diesel fuel

Truck to rail diversion information was obtained from studies conducted by Reebie Associates and Transmode. The assumptions for intermodal train configuration, average railcar weights, and rail fuel efficiencies were obtained from UP and SP. The 140 ton-mile per gallon truck fuel efficiency factor represents an average value for trucks involved in medium-distance and long-distance hauls of various commodities (Abacus Technology Corp., 1991), which are the types of truck hauls most likely to be diverted. The rail fuel efficiency factor was derived from 1994 UP and SP traffic and fuel consumption data.

Using the truck to rail diversion estimates and assumptions listed above, gross ton-mile estimates were calculated for both rail and truck, using the following formulas:

1. \( \text{No. of railcars} = \frac{\text{Number of trucks diverted}}{1.8 \text{ intermodal units/railcar}} \)

2. \( \text{Railcar gross ton miles} = (\text{No. of railcars}) \times (60 \text{ tons/railcar}) \times (\text{train distance}) \)

3. \( \text{Number of Locomotives} = (\text{No. of railcars}) \times (3.5 \text{ locomotives/train}) \)
4. Locomotive gross ton miles = (No. of locomotives) X (200 tons/locomotive) X (train distance)

5. Truck gross ton miles = (No. of trucks diverted) X (40 tons/truck) X (truck distance)

Following the calculation of estimated gross ton miles for rail and truck, the associated fuel efficiency factors were applied to obtain total rail and truck fuel consumption estimates and projected merger related changes as a result of the truck to rail diversions.

Based on 1994 carload shipment data provided by UP and SP, rail-to-truck diversions from rail line abandonments will not exceed ICC thresholds triggering a calculation of energy consumption changes. These ICC thresholds are as follows: if the proposed action will cause diversions from rail to motor carriage of more than: 1) 1,000 rail carloads a year, or 2) an average of 50 rail carloads per mile per year for any part of the affected line, than an analysis would need to be completed. These thresholds are in excess of the expected diversions; therefore, the effects of truck traffic increases due to abandonments were not analyzed.

REFERENCES

Abacus Technology Corp., 1991. Rail versus Truck Fuel Efficiency; the Relative Fuel—
Efficiency of Truck Competitive Rail Freight and Truck Operations Compared in a Range


Dames & Moore has received data from appropriate UP and SP officials which was used
in the preparation of this report.
SECTION G

RARE, THREATENED AND ENDANGERED SPECIES
## ADDITIONAL INFORMATION ON RARE, THREATENED, AND ENDANGERED SPECIES IN THE AREA OF CONSTRUCTION SITES IN ARIZONA

<table>
<thead>
<tr>
<th>Location</th>
<th>Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area</th>
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<tbody>
<tr>
<td>Casa Grande</td>
<td>Arizona hedgehog cactus</td>
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<td>Nichol's troll's head cactus</td>
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<td></td>
<td>Acuna cactus</td>
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<td>Lesser long-nosed bat</td>
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<td>Desert pupfish</td>
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<td>Gila topminnow</td>
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<td>Loach minnow</td>
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<td>Razorback sucker</td>
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<td>American peregrine falcon</td>
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<td>Bald eagle</td>
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<td>Southwestern willow flycatcher</td>
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<td>Cactus ferruginous pygmy owl</td>
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<td>Lordsburg to Uimoris</td>
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<td>Razo to Luzena</td>
<td>Cochise pincushion cactus</td>
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<td>Jaguarundi</td>
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<td>American peregrine falcon</td>
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<td>Northern aplomado falcon</td>
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<td>Southwestern willow flycatcher</td>
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<td>Whooping crane</td>
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<td>Pima pineapple cactus</td>
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<td>Huachuca water umbel</td>
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<td>Acuna cactus</td>
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<td>Gentry indigo bush</td>
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</tr>
</thead>
</table>
| Wilcox to Razo    | Cactochise pincushion cactus  
Northern aplomado falcon  
Whooping crane  
Jaguar |

Desert pupfish  *Cyprinodon macularius*
Federal status: Endangered
Critical habitat along segment: - NO
Remote possibility of occurrence in canal

Gila topminnow  *Poeciliopsis occidentalis occidentalis*
Federal status: Endangered
Critical habitat - NO
Remote possibility of occurrence in canal

Loach minnow  *Tiaroga cobitis*
Federal status: Threatened
Critical habitat along segment: - NO
Remote possibility of occurrence in canal

Razorback sucker  *Xyrauchen texanus*
Federal status: Endangered
Critical habitat along segment: - NO
Remote possibility of occurrence in canal

Birds:

American peregrine falcon  *Falco peregrinus anatum*
Federal status: Endangered
Critical habitat along segment: - NO
Preferred habitat not present along segment, but may migrate through the area

Bald eagle  *Haliaeetus leucocephalus*
Federal status: Threatened
Critical habitat along segment: - NO
Preferred habitat not present along segment, but may migrate through the area

Southwestern Willow flycatcher  *Empidonax traillii extimus*
Federal status: Endangered
Critical habitat along segment: - NO
Accidental occurrence possible, but preferred riparian habitat not present along segment

Cactus Ferruginous pygmy owl  *Glaucidium brasilianum cactorum*
Federal status: Proposed endangered
Critical habitat along segment: - No
Probably does not occur in habitat type along segment

Northern Aplomado falcon  *Falco femoralis septemrionalis*
Federal status: Endangered
Critical habitat along segment: along segment - No
Potentially could be found in habitat along segment

Whooping crane  *Grus americana*
Federal status: Endangered
Critical habitat along segment: - NO
Could pass through this habitat on way to W.lcox Playa
Lesser Long-Nosed Bat (*Leptonycteris curasoae yerbabuenae*)
Federal status: Endangered
Critical habitat along segment: - NO
Present April to September and could occur in habitat along segment

Sonoran pronghorn (*Antilocapra americana sonoriensis*)
Federal status: Endangered

Jaguarundi (*Felis yagouaroundi tolteca*)
Federal status: Endangered
Critical habitat along segment: - NO
Could occur occasionally in habitat along segment

Mexican Gray wolf (*Canis lupus baileyi*)
Federal status: Endangered
Critical habitat along segment: - NO
May cross habitat along segment

Ocelot (*Felis pardalis*)
Federal status: Endangered
Critical habitat along segment: - NO
Probably does not occur in habitat along segment

Sonoran pronghorn (*Antilocapra americana sonoriensis*)
Federal status: Endangered
Critical habitat along segment: - NO
Probably does not occur in habitat along segment

Jaguar (*Panthera onca*)
Federal status: Proposed endangered
Critical habitat along segment: - NO
Could pass through habitat along segment, but unlikely

Plants:

Arizona Agave (*Agave arizonica*)
Federal status: Endangered
Critical habitat along segment: - NO
Unlikely to find in type of habitat along segment

Arizona cliffrose (*Purshia subintegra*)
Federal status: Endangered
Critical habitat along segment: - NO
Unlikely to find in type of habitat along segment

Arizona hedgehog cactus (*Echinocereus triglochidiatus arizonicus*)
Federal status: Endangered
Critical habitat along segment: - NO
Not usually found in type of habitat along segment
Plants:

Nichol’s Turk’s head cactus  (*Echinocactus horizonthalonius var nicholii*)
Federal status:  Endangered
Critical habitat along segment:  - NO
Probably does not occur in habitat along segment

Pima Pineapple cactus  (*Coryphantha scheeri robustispina*)
Federal status:  Endangered
Critical habitat along segment:  - NO
Could occur in habitat along segment

Huachuca water umbel  (*Lilaepsis schaffneriana ssp. recurva*)
Federal status:  Proposed endangered
Critical habitat along segment:  - NO
Probably does not occur along segment

Cochise pincushion cactus  (*Coryphantha robbinsorum*)
Federal status:  Threatened
Critical habitat along segment:  - NO
Could occur in habitat along segment

Acuna cactus  (*Echinomastus erectocentrus acunensis*)
Federal status:  Category 1
Critical habitat along segment:  - NO
Could occur in habitat along this segment

Gentry Indigo bush  (*Dalea tentaculoides*)
Federal status:  Category 1
Critical habitat along segment:  - NO
Unlikely that it occurs along segment
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "MARICOPA"

LISTED  TOTAL= 13

NAME: ARIZONA AGAVE  AGAVE ARIZONICA
DESCRIPTION: HAS ATTRACTIVE ROSETTES OF BRIGHT GREEN LEAVES WITH DARK MAHOGANY MARGINS. FLOWER: 80+" "ON-SUB-UMBELLATE INFLORESCENCES.
COUNTIES: GILA, YAVAPAI, MARICOPA
HABITAT: TRANSITION ZONE BETWEEN OAK-JUNIPER WOODLAND & MOUNTAIN MAHOGANY-OAK SCRUB
SCATTERED CLONES IN NEW RIVER MOUNTAINS AND SIERRA ANCHA. USUALLY FOUND ON STEEP, ROCKY SLOPES. POSSIBLY MAZATAL MOUNTAINS SHOULD BE LOOKED FOR WHEREVER THE RANGES OF Agave toumeyana var. beila AND Agave chrysantha OVERLAP.

NAME: ARIZONA CLIFFROSE  PURSHIA SUBINTEGRA
STATUS: ENDANGERED  CRITICAL HABITAT: No  RECOVERY PLAN: Yes  CFR: 49 FR 22326 6-29-84
DESCRIPTION: EVERGREEN SHRUB OF THE ROSE FAMILY (ROSEACEAE). BARK PALE SHREDDY. YOUNG TWIGS WITH DENSE HAIRS. LEAVES 1-5 LOBES AND EDGES CURL DOWNWARD (REVOLUTE). FLOWERS: 5 WHITE OR YELLOW ELEVATION PETALS <0.5 INCH LONG.
COUNTIES: GRAHAM YAVAPAI MARICOPA MOHAVE
HABITAT: CHARACTERISTIC WHITE SOILS OF TERTIARY LIMESTONE LAKEBED DEPOSITS CAN BE SEEN FROM A DISTANCE.

NAME: ARIZONA HEDGEHOG CACTUS  ECHINOCEREUS TRIGLOCHIDIATUS ARIZONICUS
DESCRIPTION: DARK GREEN CYLINDROID 2.5-12 INCHES TALL, 2-10 INCHES IN DIAMETER, SINGLE OR IN CLUSTERS. 1-3 GRAY OR PINKISH CENTRAL SPINES LARGEST DEFLEXED AND 5-11 SHORTER RADIAL SPINES. FLOWER: BRILLIANT RED. SIDE OF STEM IN APRIL- MAY
COUNTIES: MARICOPA, GILA, PINAL
HABITAT: ECOTONE BETWEEN INTERIOR CHAPARRAL AND MADREAN EVERGREEN WOODLAND
OPEN SLOPES, IN NARROW CRACKS BETWEEN BOULDERS, AND IN UNDERSTORY OF SHRUBS. THIS VARIETY IS BELIEVED TO INTERGRADE AT THE EDGES OF ITS DISTRIBUTION WITH VARIETIES MELANCANTHUS AND NEO-MEXICANUS CAUSING SOME CONFUSION IN IDENTIFICATION.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-I SPECIES FOR THE FOLLOWING COUNTY: "MARICOPA"

NAME: **LESSER LONG-NOSED BAT**

**LEPTONYCERIS CURASOAE YERBABUENAE**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No

**DESCRIPTION:** ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

**ELEVATION RANGE:** <6000 FT

**COUNTIES:** COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL, MARICOPA

**HABITAT:** DESERT SCRUB HABITAT WITH AGAVE / Nd COLUMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA, USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: **SONORAN PRONGHORN**

**ANTILOCAPRA AMERICANA SONORIENSIS**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** Yes

**DESCRIPTION:** BUFF ON BACK AND WHITE BELOW. HOOFED WITH SLIGHTLY CURVED TAIL KNOBS HAVING A SINGLE PRONG. SMALLEST AND PALEST OF THE PRONGHORN SUBSPECIES.

**ELEVATION RANGE:** 2000-4000 FT

**COUNTIES:** PIMA, YUMA, MARICOPA

**HABITAT:** BROAD, INTERMOUNTAIN ALLUVIAL VALLEYS WITH CREOSOTE-BURSAGE & PALO VERDE-MIXED CACTI ASSOCIATIONS

TYPICALLY, BAJADAS ARE USED AS FAWNING AREAS AND SANDY DUNE AREAS PROVIDE FOOD SEASONALLY. HISTORIC RANGE WAS PROBABLY LARGER THAN EXISTS TODAY. THIS SUBSPECIES ALSO OCCURS IN MEXICO.

NAME: **DESERT PUPFISH**

**CYPRINODON MACULARIUS**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** Yes  
**RECOVERY PLAN:** Yes

**DESCRIPTION:** SMALL (2 INCHES) SMOOTHLY ROUNDED BODY SHAPE WITH NARROW VERTICAL BARS ON THE SIDES. BREEDING MALES BLUE ON HEAD AND SIDES WITH YELLOW ON TAIL. FEMALES & JUVENILES TAN TO OLIVE COLORED BACK AND SILVERY SIDES.

**ELEVATION RANGE:** <5000 FT

**COUNTIES:** LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL, YAVAPAI, SANTA CRUZ

**HABITAT:** SHALLOW SPRINGS, SMALL STREAMS, AND MARSHES. TOLERATES SALINE & WARM WATER

CRITICAL HABITAT INCLUDES QUITOBAQUITO SPRING, PIMA COUNTY, PORTIONS OF SAN FELIPE CREEK, CARRIZO WASH, AND FISH CREEK WASH, IMPERIAL COUNTY, CALIFORNIA. TWO SUBSPECIES ARE RECOGNIZED: DESERT PUPFISH (C. m. macularis) AND QUITOBAQUITO PUPFISH (C. m. eremus).
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "MARICOPA"

NAME: GILA TOPMINNOW

**POECILIOPSIS OCCIDENTALIS OCCIDENTALIS**

**STATUS:** ENDANGERED

CRITICAL HABITAT: **No**

RECOVERY PLAN: **Yes**

CFR: 32 FR 4001, 03-11-1967

**DESCRIPTION:** SMALL (2 INCHES), GUPPY-LIKE. LIVE BEARING, LACKS DARK SPOTS ON ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.

**ELEVATION RANGE:** <4500 FT.

**COUNTIES:** GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ

**HABITAT:** SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWs

NAME: RAZORBACK SUCKER

**XYRAUCHEN TEXANUS**

**STATUS:** ENDANGERED

CRITICAL HABITAT: **Yes**

RECOVERY PLAN: **No**

CFR: 55 FR 21154, 05-22-1990;

59 FR 13374, 03-21-1994

**DESCRIPTION:** LARGE (UP TO 3 FEET AND UP TO 16 POUNDS) LONG, HIGH SHARP-EDGED KEEL-LIKE HUMP BEHIND THE HEAD. HEAD FLATTENED ON TOP.

OLIVE-BROWN ABOVE TO YELLOWISH BELOW.

**ELEVATION RANGE:** <6000 FT.

**COUNTIES:** GREENLEE, MOHAVE, PINAL, YAVAPAI, YUMA, LA PAZ, MARICOPA (REFUGIA), GILA, COCONINO, GRAHAM

**HABITAT:** RIVERINE & LACUSTRINE AREAS. GENERALLY NOT IN FAST MOVING WATER AND MAY USE BACKWATERS

**SPECIES IS ALSO FOUND IN HORSESHOE RESERVOIR (MARICOPA COUNTY).**

NAME: AMERICAN PEREGRINE FALCON

**FALCO PEREGRINUS ANATUM**

**STATUS:** ENDANGERED

CRITICAL HABITAT: **No**

RECOVERY PLAN: **Yes**

CFR: 35 FR 16047, 10-13-70;

35 FR 8495, 06-02-70

**DESCRIPTION:** A RECLUSIVE, CROW-SIZED FALCON SLATY BLUE ABOVE WHITISH BELOW WITH FINE DARK BANDING. THE HEAD IS BLACK AND APPEARS TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

**ELEVATION RANGE:** 3500-9000 FT.

**COUNTIES:** MOHAVE COCONINO NAVAJO APACHE SANTA CRUZ MARICOPA COCHISE YAVAPAI GILA PINAL PIMA GREENLEE GRAHAM

**HABITAT:** CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-ROUND RESIDENTS. OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM REPRODUCTIVE FAILURE FROM PESTICIDES.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "MARICOPA"

NAME: BALD EAGLE

**Haliaeetus leucocephalus**

**STATUS.** THREATENED

**CRITICAL HABITAT:** No

**RECOVERY PLAN:** Yes

**CFR:** 50 FR 35999, 07-12-95

**DESCRIPTION:** LARGE. ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38"; WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

**ELEVATION RANGE:** VARIES FT.

**COUNTIES:** Yuma, La Paz, Mohave, Yavapai, Maricopa, Pinal, Coconino, Navajo, Apache, Santa Cruz, Pima, Gila, Graham

**HABITAT:** LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001 03-11-1967; 43 FR 5233 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM.

NAME: MEXICAN SPOTTED OWL

**Strix occidentalis lucida**

**STATUS: THREATENED**

**CRITICAL HABITAT:** Yes

**RECOVERY PLAN:** Yes

**CFR:** 56 FR 14678, 04-11-91

**DESCRIPTION:** MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

**ELEVATION RANGE:** 4100-9000 FT.

**COUNTIES:** Mohave, Coconino, Navajo, Apache, Yavapai, Graham, Greenlee, Cochise, Santa Cruz, Pima, Pinal, Gila, Maricopa

**HABITAT:** NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE, IN CANYONS. AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: SOUTHWESTERN WILLOW FLYCATCHER

**Empidonax traillii extimus**

**STATUS: ENDANGERED**

**CRITICAL HABITAT:** Yes

**RECOVERY PLAN:** No

**CFR:** 60 FR 10694, 02-27-95

**DESCRIPTION:** SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT. LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

**ELEVATION RANGE:** <8500 FT.

**COUNTIES:** Yavapai, Gila, Maricopa, Mohave, Coconino, Navajo, Apache, Pinal, La Paz, Greenlee, Graham, Uma, Pima, Cochise, Santa Cruz

**HABITAT:** COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "MARICOPA"

NAME: YUMA CLAPPER RAIL

RALLUS LONGIROSTRIS YUMANENSIS

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes

CFR: 32 FR 4001, 03-11-67; 48 FR 34182, 07-27-83

DESCRIPTION: WATER BIRD WITH LONG LEGS AND SHORT TAIL, LONG SLENDER DECURVED BILL. MOTTLED BROWN ON GRAY ON ITS RUMP. FLANKS AND UNDERSIDES ARE DARK GRAY WITH NARROW VERTICAL STRIPES PRODUCING A BARRING EFFECT.

ELEVATION

RANGE: <4500 FT.

COUNTIES: YUMA, LA PAZ, MARICOPA, PINAL, MOHAVE

HABITAT: FRESH WATER AND BRACKISH MARSHES

SPECIES IS ASSOCIATED WITH DENSE EMERGENT RIPARIAN VEGETATION. REQUIRES WET SUBSTRATE (MUDFLAT, SANDBAR) WITH DENSE HERBACEOUS OR WOODY VEGETATION FOR NESTING AND FORAGING. CHANNELIZATION AND MARSH DEVELOPMENT ARE PRIMARY SOURCES OF HABITAT LOSS.
PROPOSED TOTAL= 1

NAME: CACTUS FERRUGINOS PYGMY-OWL GLAUCIDIDUM BRASILI ANUM CACTORUM

STATUS: PROPOSED ENDANGERED CRITICAL HABITAT: No RECOVERY PLAN: No CFR: 59 FR 63875, 12-12-94

DESCRIPTION: SMALL (APPROX. 7”), DIURNAL OWL, REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, YAVAPAI

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND DESERT SCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT HAS BEEN PROPOSED FOR THIS SPECIES.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: \textit{Pinal}

\textbf{LISTED} \quad \textbf{TOTAL} = 13

\textbf{NAME:} ARIZONA HEDGEHOG CACTUS \quad \textit{ECHINOCEREUS TRIGLOCHIDIATUS ARIZONICUS}

\textbf{STATUS:} ENDANGERED \quad \textbf{CRITICAL HABITAT:} No \quad \textbf{RECOVERY PLAN:} No \quad \textbf{CFR:} 44 FR 61556, 10-15-1979

\textbf{DESCRIPTION:} DARK GREEN CYLINDROID 2.5-12 INCHES TALL, 2-10 INCHES IN DIAMETER. SINGLE OR IN CLUSTERS. 1-3 GRAY OR PINKISH CENTRAL SPINES LARGEST DEFLEXED AND 5-11 SHORTER RADIAL SPINES. FLOWER: BRILLIANT RED, SIDE OF STEM IN APRIL- MAY

\textbf{COUNTIES:} MARICOPA, GILA, PINAL

\textbf{HABITAT:} ECOTONE BETWEEN INTERIOR CHAPPARAL AND MADREAN EVERGREEN WOODLAND

OPEN SLOPES, IN NARROW CRACKS BETWEEN BOULDERS, AND IN UNDERSTORY OF SHRUBS. THIS VARIETY IS BELIEVED TO INTERGRADE AT THE EDGES OF ITS DISTRIBUTION WITH VARIETIES MELANCANTHUS AND NEO-MEXICANUS CAUSING SOME CONFUSION IN IDENTIFICATION.

\textbf{NAME:} NICHOL’S TURK’S HEAD CACTUS \quad \textit{ECHINOCACTUS HORIZONTHALONIUS VAR NICHOLII}

\textbf{STATUS:} ENDANGERED \quad \textbf{CRITICAL HABITAT:} No \quad \textbf{RECOVERY PLAN:} No \quad \textbf{CFR:} 44 FR 61927, 10-26-1979

\textbf{DESCRIPTION:} BLUE-GREEN TO YELLOWISH-GREEN COLUMNAR, 18 INCHES TALL, 8 INCHES IN DIAMETER. SPINE CLUSTERS HAVE 5 RADIAL & 3 CENTRAL SPINES; ONE DOWNWARD SHORT, 2 SPINES UPWARD AND RED OR BASALLY GRAY. FLOWER: PINK FRUIT: WOOLLY WHITE

\textbf{COUNTIES:} PINAL, PIMA, YUMA

\textbf{HABITAT:} SONORAN DESERT SCRUB

FOUND IN UNSHADED MICROSITES IN SONORAN DESERT SCRUB ON DISSECTED ALLUVIAL FANS AT THE FOOT OF LIMESTONE MOUNTAINS AND ON INCLINED TERRACES AND SADDLES ON LIMESTONE MOUNTAIN SIDES. NEW POPULATION ON YUMA PROVING GROUNDS.

\textbf{NAME:} LESSER LONG-NOSED BAT \quad \textit{LEPTONYCYTERIS CURASOAE YERBABUENAE}

\textbf{STATUS:} ENDANGERED \quad \textbf{CRITICAL HABITAT:} No \quad \textbf{RECOVERY PLAN:} No \quad \textbf{CFR:} 53 FR 38456, 09-30-88

\textbf{DESCRIPTION:} ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL: MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

\textbf{ELEVATION RANGE:} <6000 FT.

\textbf{COUNTIES:} COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL, MARICOPA

\textbf{HABITAT:} DESERT SCRUB HABITAT WITH AGAVE AND COLUMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA, USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "PINAL"

NAME: DESERT PUPFISH
CYPRINODON MACULARIUS
STATUS: ENDANGERED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 51 FR 10842, 03-31-1986
DESCRIPTION: SMALL (2 INCHES) SMOOTHLY ROUNDED BODY SHAPE WITH NARROW VERTICAL BARS ON THE SIDES. BREEDING MALES BLUE ON HEAD AND SIDES WITH YELLOW ON TAIL. FEMALES & JUVENILES TAN TO OLIVE COLORED BACK AND SILVERY SIDES.
ELEVATION RANGE: <5000 FT.
COUNTIES: LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL, YAVAPAI, SANTA CRUZ
HABITAT: SHALLOW SPRINGS, SMALL STREAMS, AND MARSHES. TOLERATES SALINE & WARM WATER

CRITICAL HABITAT INCLUDES QUITOBAQUITO SPRING, PIMA COUNTY. PORTIONS OF SAN FELIPE CREEK, CARRIZO WASH, AND FISH CREEK WASH, IMPERIAL COUNTY, CALIFORNIA. TWO SUBSPECIES ARE RECOGNIZED: DESERT PUPFISH (C. m. maculans) AND QUITOBAQUITO PUPFISH (C. m. eremus).

NAME: GILA TOPMINNOW
POECILOPSIS OCCIDENTALIS OCCIDENTALIS
STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 32 FR 4001, 03-11-1967
DESCRIPTION: SMALL (2 INCHES), GUPPY-LIKE, LIVE BEARING. LACKS DARK SPOTS ON ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.
ELEVATION RANGE: <4500 FT.
COUNTIES: GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ
HABITAT: SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWS

NAME: LOACH MINNOW
TIAROCA COBITIS
STATUS: THREATENED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 51 FR 39468, 10-28-1986
CFR: 59 FR 10898, 03-08-1994
DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS.
ELEVATION RANGE: <7000 FT.
COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, (AZ); GRANT, CATRON, (NM)
HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLE & GRAVEL
CRITICAL HABITAT IS IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST WEST AND MIDDLE FORKS OF THE GILA RIVER, AND THE MAINSTEM UPPER GILA RIVER. PRESENTLY FOUND IN ALL CRITICAL HABITAT PLUS WHITE RIVER AND EAGLE CREEKS.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: Pinal

Arizona

NAME: RAZORBACK SUCKER

**XYRAUCHEN TEXANUS**

STATUS: ENDANGERED

CRITICAL HABITAT: Yes

RECOVERY PLAN: No

CFR: 55 FR 21154, 05-22-1990;

59 FR 13374, 03-21-1994

DESCRIPTION: LARGE (UP TO 3 FEET AND UP TO 16 POUNDS) LONG, HIGH SHARP-EDGED KEEL-LIKE HUMP BEHIND THE HEAD. HEAD FLATTENED ON TOP. OLIVE-BROWN ABOVE TO YELLOWISH BELOW.

ELEVATION RANGE: <6000 FT.

COUNTIES: GREENLEE, MOHAVE, PINAL, YAVAPAI, YUMA, LA PAZ, MARICOPA (REFUGIA), GILA, COCONINO, GRAHAM

HABITAT: RIVERINE & LACRINE AREAS, GENERALLY NOT IN FAST MOVING WATER AND MAY USE BACKWATERS

SPECIES IS ALSO FOUND IN HORSESHOE RESERVOIR (MARICOPA COUNTY).

NAME: SPIKEDACE

**MEDA FULGIDA**

STATUS: THREATENED

CRITICAL HABITAT: Yes

RECOVERY PLAN: Yes

CFR: 51 FR 23769, 07-01-1986;

59 FR 10906, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES) SLIM WITH SLIVERY SIDES & "SPINE" ON DORSAL FIN. BREEDING MALES BRASSY GOLDEN COLOR

ELEVATION RANGE: <6000 FT.

COUNTIES: GRAHAM, PINAL, GREENLEE, YAVAPAI, (AZ); GRANT, (NM)

HABITAT: MODERATE TO LARGE PERENNIAL STREAMS WITH GRAVEL COBBLE SUBSTRATES AND MODERATE TO SWIFT VELOCITIES

CRITICAL HABITAT IN ARAVAIPA CREEK, UPPER VERDE RIVER, AND PORTIONS OF GILA RIVER IN NEW MEXICO PRESENTLY FOUND IN ARAVAIPA CREEK, EAGLE CREEK, VERDE RIVER ABOVE VERDE VALLEY, EAST-WEST-MAIN AND MIDDLE FORKS OF THE GILA RIVER IN NEW MEXICO, AND GILA RIVER FROM SAN PEDRO RIVER TO ASHURST HAYDEN DAM.

NAME: AMERICAN PEREGRINE FALCON

**FALCO PEREGRINUS ANATUM**

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes

CFR: 35 FR 16047, 10-13-70;

35 FR 16047, 10-13-70;

50 FR 8495, 06-02-70

DESCRIPTION: A RECLUSIVE, CROW-SIZED FALCON SLATY BLUE ABOVE, WHITISH BELOW WITH FINE DARK BARRING. THE HEAD IS BLACK AND APPEARS TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

ELEVATION RANGE: 3500-9000 FT.

COUNTIES: MOHAVE COCONINO NAVAJO APACHE SANTA CRUZ MARICOPA COCHISE YAVAPAI GILA PINAL PIMA GREENLEE GRAHAM

HABITAT: CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE-RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-ROUND RESIDENTS. OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM REPRODUCTIVE FAILURE FROM PESTICIDES.
LISTED, PROPOSED, AND CANDIDATE CATEGORY I SPECIES FOR THE FOLLOWING COUNTY: *Pinal*

**NAME: BALD EAGLE**

**Haliaeetus leucocephalus**

**STATUS: THREATENED**

**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** Yes  
**CFR 60 FR 35999, 07-12-95**

**DESCRIPTION:** LARGE. ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38", WINGS 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

**COUNTIES:** Yuma, La Paz, Mohave, Yavapai, Maricopa, Pinal, Coconino, Navajo, Apache, Santa Cruz, Pima, Gila, Graham

**HABITAT:** LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS. RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967, 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT. THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM.

**NAME: MEXICAN SPOTTED OWL**

**Strix occidentalis lucida**

**STATUS: THREATENED**

**CRITICAL HABITAT:** Yes  
**RECOVERY PLAN:** Yes  
**CFR 56 FR 14678, 04-11-91**

**DESCRIPTION:** MEDIUM SIZED WITH DARK EYES AND NO EAR TIES. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

**ELEVATION RANGE:** 4100-9000 FT

**COUNTIES:** Mohave, Coconino, Navajo, Apache, Yavapai, Graham, Greenlee, Cochise, Santa Cruz, Pima, Pinal, Gila, Maricopa

**HABITAT:** NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDEROSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

**NAME: SOUTHWESTERN WILLOW FLYCATCHER**

**Empidonax traillii extimus**

**STATUS: ENDANGERED**

**CRITICAL HABITAT:** Yes  
**RECOVERY PLAN:** No  
**CFR 60 FR 10694, 02-27-95**

**DESCRIPTION:** SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY, TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

**ELEVATION RANGE:** <8500 FT

**COUNTIES:** Yavapai, Gila, Maricopa, Mohave, Coconino, Navajo, Apache, Pinal, La Paz, Greenlee, Graham, Yuma, Pima, Cochise, Santa Cruz

**HABITAT:** COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS.
NAME: YUMA CLAPPER RAIL

RALLUS LONGIROSTRIS YUMANENSIS

STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 32 FR 4001, 03-11-67; 48 FR 34182, 07-27-83

DESCRIPTION: WATER BIRD WITH LONG LEGS AND SHORT TAIL. LONG SLENDER DECURVED BILL. MOTTLED BROWN ON GRAY ON ITS RUMP. FLANKS AND UNDERSIDES ARE DARK GRAY WITH NARROW VERTICAL STRIPES PRODUCING A BARRING EFFECT.

ELEVATION RANGE: <4500 FT.

COUNTIES: YUMA, LA PAZ, MARICOPA, PINAL, MOHAVE

HABITAT: FRESH WATER AND BRACKISH MARSHES

SPECIES IS ASSOCIATED WITH DENSE EMERGENT RIPARIAN VEGETATION. REQUIRES WET SUBSTRATE (MUDFLAT, SANDBAR) WITH DENSE HERBACEOUS OR WOODY VEGETATION FOR NESTING AND FORAGING. CHANNELIZATION AND MARSH DEVELOPMENT ARE PRIMARY SOURCES OF HABITAT LOSS.
PROPOSED TOTAL = 1

NAME: CACTUS FERRUGINOUS PYGMY-OWL

GLAUCIDIUM BRASILIANUM CACTORUM

STATUS: PROPOSED ENDANGERED CRITICAL HABITAT: No RECOVERY PLAN: No CFR: 59 FR 63975, 12-12-94

DESCRIPTION: SMALL (APPROX. 7"), DIURNAL OWL, REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, YAVAPAI

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND DESERT SCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT HAS BEEN PROPOSED FOR THIS SPECIES.
CANDIDATE TOTAL = 1

NAME: ACUNA CACTUS

ECHINOMASTUS ERECTOCENTRUS ACUNENSIS

STATUS: CATEGORY-1  
CRITICAL HABITAT: No  
RECOVERY PLAN: No  
CFR: No

DESCRIPTION: <12 INCHES HIGH SPINE CLUSTERS BORNE ON TUBERCLES, EACH WITH 
A GROOVE ON THE UPPER SURFACE. 2-3 CENTRAL SPINES AND 12 
RADIAL SPINES. FLOWERS PINK TO PURPLE

ELEVATION RANGE: 1300-2000 FT.

COUNTIES: PINAL, PIMA

HABITAT: WELL DRAINED KNOLLS AND GRAVEL RIDGES IN SONORAN DESERT SCRUB

IMMATURE PLANTS DISTINCTLY DIFFERENT FROM MATURE PLANTS. THEY ARE DISC-SHAPED OR SPHERICAL AND 
HAVE NO CENTRAL SPINES UNTIL THEY ARE ABOUT 1.5 INCHES. RADIAL SPINES ARE DIRTY WHITE WITH MAROON 
TIPS.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: COCHISE

LISTED  TOTAL= 16

NAME: COCHISE PINCUSHION CACTUS  CORYPHANTHA ROBBINSORUM
DESCRIPTION: A SMALL UNBRANCHED CACTUS WITH NO CENTRAL SPINES AND 11-17 WHITE RADIAL SPINES. THE BELL-SHAPED FLOWERS ARE BORNE ON THE ENDS OF TUBERCULES (Protrusions). FLOWERS: BELL SHAPED, PALE YELLOW-GREEN. FRUITS: ORANGE-RED TO RED
COUNTIES: COCHISE AND SONORA, MEXICO
HABITAT: SEMIDESERT GRASSLAND WITH SMALL SHRUBS, AGAVE, OTHER CACTI, AND GRAMA GRASS.
GROWS ON GRAY LIMESTONE HILLS.

NAME: NEW MEXICAN RIDGE-NOSED RATTLESNAKE  CROTALUS WILLARDI OBSCURUS
COUNTIES: COCHISE
HABITAT: PRESUMABLY CANYON BOTTOMS IN PINE-OAK & PINE-FIR COMMUNITIES WITH ALDER, MAPLE, OAK, & BOX ELDER
THE SUBSPECIES HAS NOT BEEN DOCUMENTED IN ARIZONA. HOWEVER, IT HAS BEEN OBSERVED NEAR THE ARIZONA BORDER IN THE PELONCILLO MOUNTAINS AND LIKELY OCCURS IN THE ARIZONA PORTION OF THAT RANGE AS WELL. ANOTHER SUBSPECIES, (CROTALUS WILLARDI WILLARDI), IS AN ARIZONA STATE CANDIDATE.

NAME: JAGUARUNDI  FELIS YAGOUAROUNDI TOLTECA
STATUS: ENDANGERED  CRITICAL HABITAT: No  RECOVERY PLAN: No  CFR: 41 FR 24064; 06-14-76
DESCRIPTION: SMALL CAT WITH SHORT LEGS, SLIM, ELONGATE BODY, AND LONG TAIL. HEAD SMALL & FLATTENED WITH SHORT ROUNDED EARS. REDDISH-YELLOW OR BLACKISH TO BROWN-GRAY IN COLOR AND WITHOUT SPOTS.
COUNTIES: SANTA CRUZ, PIMA, COCHISE
HABITAT: CAN BE FOUND IN A VARIETY OF HABITATS (SEE BELOW)

SEMI-ARID THORNIE FORESTS, DECIDuous FORESTS, HUMID PRE-MONTANE FORESTS, UPLAND DRY SAVANNAHS, SWAMPY GRASSLANDS, RIPARIAN AREAS, AND DENSE BRUSH. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. NO SPECIMENS HAVE BEEN COLLECTED IN ARIZONA.

0565
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "COCHISE"

NAME: **LESSER LONG-NOSED BAT**  
**LEPTONYCTERIS CURASOAE YERBABUENAE**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:** 53 FR 35456, 09-30-88

**DESCRIPTION:** ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

**COUNTIES:** COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL, MARICOPA

**HABITAT:** DESERT SCRUB HABITAT WITH AGAVE AND COLUMNNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA, USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

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NAME: **MEXICAN GRAY WOLF**  
**CANIS LUPUS BAILEYI**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** Yes  
**CFR:** 32 FR 4001, 03-11-67; 43 FR 1912, 03-09-78

**DESCRIPTION:** LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR. BUT USUALLY A SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH 60-90 POUNDS.

**ELEVATION RANGE:** 4,000-12,000 FT.

**COUNTIES:** COCHISE, PIMA, SANTA CRUZ

**HABITAT:** CHAPPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO.

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NAME: **OCELOT**  
**FELIS PARDALIS**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** Yes  
**CFR:** 47 FR 31670, 07-21-82

**DESCRIPTION:** MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS HEAVILY streakED THAN THE BACK AND SIDES.

**ELEVATION RANGE:** <8000 FT.

**COUNTIES:** SANTA CRUZ, PIMA, COCHISE

**HABITAT:** HUMID TROPICAL & SUB-TROPICAL FOREST, SAVANNAHS, AND SEMI-ARID THORNSCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS, SECOND-GROWTH WOODLAND, AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.
NAME: BEAUTIFUL SHINER
CYPRIELLA FORMOSA
STATUS: THREATENED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 49 FR 34490, 08-31-1984
DESCRIPTION: SMALL (2.5 INCHES) SHINY MINNOW AND VERY SIMILAR TO RED SHINER. MALES COLORFUL DURING BREEDING (YELLOW-ORANGE OR ORANGE ON CAUDAL AND LOWER FINS AND BLUISH BODY.
COUNTIES: COCHISE
HABITAT: SMALL TO MEDIUM SIZED STREAMS AND PONDS WITH SAND, GRAVEL, AND ROCK BOTTOMS.
VIRTUALLY EXTIRPATED IN THE UNITED STATES, WITH THE EXCEPTION OF A FEW ISOLATED POPULATIONS ON NATIONAL WILDLIFE REFUGES AND IN MEXICO. SAME CRITICAL HABITAT AS YAQUI CHUB AND CATFISH (SEE 49 FR 34490, 08-31-1984).

NAME: YAQUI CATFISH
ICTALURUS PRICEI
STATUS: THREATENED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 49 FR 34490, 08-31-1984
DESCRIPTION: SIMILAR TO CHANNEL CATFISH (ICTALURUS PUNCTATUS) EXCEPT ANAL FIN BASE IS SHORTER AND THE DISTAL MARGIN OF THE ANAL FIN IS BROADLY ROUNDED WITH 23-25 SOFT RAYS. BODY USUALLY PROFUSELY SPECKLED.
COUNTIES: COCHISE
HABITAT: MODERATE TO LARGE STREAMS WITH SLOW CURRENT OVER SAND AND ROCK BOTTOMS
CRITICAL HABITAT ALL AQUATIC HABITATS IN THE MAIN PORTION OF SAN BERNADINO NATIONAL WILDLIFE REFUGE

NAME: YAQUI CHUB
GILA PURPUREA
STATUS: ENDANGERED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 49 FR 34490, 08-31-1984
DESCRIPTION: MEDIUM SIZED MINNOW (<6 INCHES) DARK COLORED, LIGHTER BELOW. DARK TRIANGULAR CAUDAL SPOT
COUNTIES: COCHISE (AZ), MEXICO
HABITAT: DEEP POOLS OF SMALL STREAMS, POOLS, OR PONDS NEAR UNDERCUT BANKS.
CRITICAL HABITAT INCLUDES ALL AQUATIC HABITATS OF THE MAIN PORTION SAN BERNADINO NATIONAL WILDLIFE REFUGE.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "COCHISE"

NAME: YAQUI TOPMINNOW

POECILIOPSIS OCCIDENTALIS SONORIENSIS

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: SMALL (2 INCHES) TOPMINNOW GUPPY-LIKE, LIVE BEARING, LACKING DARK SPOTS. BREEDING MALES JET BLACK WITH YELLOW FINS.

ELEVATION RANGE: <4500 FT.

COUNTRIES: COCHISE

HABITAT: SMALL TO MODERATE SIZED STREAMS, SPRINGS, & CIENEGAS GENERALLY IN SHALLOWS

NAME: AMERICAN PEREGRINE FALCON

FALCO PEREGRINUS ANATUM

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35 FR 8495, 05-02-70

DESCRIPTION: A RECLUSIVE, CROWN-SIZED FALCON SLATY BLUE ABOVE WHITISH BELOW WITH FINE DARK BARRING. THE HEAD IS BLACK AND APPEARS TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

ELEVATION RANGE: 3500-9000 FT.

COUNTRIES: MOHAVE COCONINO NAVAJO SANTA CRUZ MARICOPA COCHISE YAVAPAI GILA PINAL PIMA GREENLEE GRAHAM

HABITAT: CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-ROUND RESIDENTS. OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM REPRODUCTIVE FAILURE FROM PESTICIDES.

NAME: CALIFORNIA CONDOR

GYMNOPS CALIFORNIANUS

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: VERY LARGE VULTURE (55 INCHES HEAD TO TAIL, WING=34, TAIL=16, TARSUS=4 25). HEAD AND UPPER PARTS OF NECK BARE, BILL YELLOW, CERE, HEAD, AND NECK YELLOWISH-RED, PLUMAGE GREY-BLACK.

ELEVATION RANGE: VARIES FT.

COUNTRIES: MOHAVE, COCONINO, NAVAJO COCHISE

HABITAT: HIGH DESERT CANYONLANDS, AND PLATEAUS

RECOVERY/REINTRODUCTION PROGRAM CURRENTLY EVALUATING THE FEASIBILITY OF REINTRODUCTION INTO ARIZONA BY 1996. NO LONGER OCCURS IN ARIZONA.
NAME: MEXICAN SPOTTED OWL

STATUS: THREATENED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 56 FR 14878, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAJAVO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE.

GENERALY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE. IN CANYONS. AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: NORTHERN APLOMADO FALCON

STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 51 FR 6686, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS. GRAY BACK. LONG BANDED TAIL AND A DISTINCT BLACK AND WHITE FACIAL PATTERN. SMALLER THAN PEREGRINE LARGER THAN KESTREL. BREEDS BETWEEN MARCH-JUNE

ELEVATION RANGE: 3500-9000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

NAME: SOUTHWESTERN WILLOW FLYCATCHER

STATUS: ENDANGERED
CRITICAL HABITAT: Yes
RECOVERY PLAN: No
CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS. WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE: <6500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAJAVO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "COCHISE"

NAME: WHOOPING CRANE

GRUS AMERICANA

STATUS: ENDANGERED
CRITICAL HABITAT: Yes
RECOVERY PLAN: Yes
CFR: 32 FR 4001, 03-11-1967, 43
FR 20938, 05-15-78

DESCRIPTION: TALLEST AMERICAN BIRD (UP TO 5 FEET) SNOWY WHITE, LONG NECK AND LEGS, BLACK WING TIPS, RED CROWN, AND BLACK WEDGE SHAPED PATCH OF FEATHERS BEHIND ITS EYE.

ELEVATION RANGE: 4500 FT

COUNTIES: COCHISE

HABITAT: MARSHES, PRAIRIES, RIVER BOTTOMS

BIRDS IN THE ROCKY MOUNTAIN POPULATION ARE OCCASIONAL VISITORS IN ARIZONA DURING MIGRATION, USUALLY NEAR WILCOX PLAYA.
PROPOSED TOTAL = 4

NAME: CANELO HILLS LADIES' TRESSES  SPIRANTHES DELITESCENS

STATUS: PROPOSED ENDANGERED  CRITICAL HABITAT: No  RECOVERY PLAN: No  CFR: 60 FR 16836, 4-3-1995
DESCRIPTION: SLENDER ERCT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE). FLOWER: STALK 50 CM TALL, MAY CONTAIN 40 WHITE FLOWERS SPIRALLY ARRANGED ON THE FLOWERING STALK.
COUNTIES: COCHISE, SANTA CRUZ
HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

NAME: HUACHUCA WATER UMBEL  LILAEOPSIS SCHAFFNERIANA ssp RECURVA

STATUS: PROPOSED ENDANGERED  CRITICAL HABITAT: No  RECOVERY PLAN: No  CFR: 60 FR 16836, 4-3-1995
DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL, IN THE PARSLEY FAMILY (UMBELLIFERAE) WITH SLENDER ERCT, HOLLOW, LEAVES THAT GROW FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10 FLOWERED UMBELS ARISE FROM ROOT NODES.
COUNTIES: PIMA, SANTA CRUZ, COCHISE
HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

NAME: JAGUAR, UNITED STATES POPULATION  PANTHERA ONCA

DESCRIPTION: MUSCULAR CAT WITH RELATIVELY SHORT, MASSIVE LIMBS AND A DEEP-CHESTED BODY. CINNAMON-BUFF IN COLOR WITH BLACK SPOTS.
COUNTIES: COCHISE, PIMA, SANTA CRUZ
HABITAT: IN ARIZONA, RANGED WIDELY THROUGHOUT A VARIETY OF HABITATS FROM SONORAN DESERT TO CONIFER FORESTS

MOST RECORDS ARE FROM THE MADREAN EVERGREEN-WOODLAND, SHRUB-INVADY SEMI-DESERT GRASSLAND, AND ALONG RIVERS. HISTORIC RANGE IS CONSIDERED TO HAVE EXTENDED BEYOND THE COUNTIES LISTED ABOVE. REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. THIS SPECIES IS LISTED AS ENDANGERED FROM THE U.S.-MEXICO BORDER SOUTH. LAST CONFIRMED INDIVIDUAL WAS KILLED IN ARIZONA IN 1991, SINCE THEN UNCONFIRMED SIGHTINGS AND TRACKS CONTINUE "TO BE REPORTED."
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "COCHISE"

CANDIDATE TOTAL = 5

NAME: BLUMER'S DOCK

RUMEX ORTHONEURUS

STATUS: CATEGORY-1

CRITICAL HABITAT: No

RECOVERY PLAN: No

CFR:  

DESCRIPTION: LARGE LONG-LIVED PERENNIAL PLANT IN THE BUCKWHEAT FAMILY

THAT CAN REACH 1.2-2.0 METERS. LARGE BROAD, OVAL SEMI-
Succulent LEAVES ARE BRIGHT GREEN. CONSPICUOUS SECONDARY
VEINS AT RIGHT ANGLES TO THE MIDVEIN

COUNTIES: GILA, COCHISE

HABITAT: MID TO HIGH ELEVATION SPRINGS, STREAMS, & WETLANDS WITH MOIST ORGANIC SOILS OR SHADeD CANYONS

NAME: LEMMON FLEABANE

ERIGERON LEMMONII

STATUS: CATEGORY-1

CRITICAL HABITAT: No

RECOVERY PLAN: No

CFR:  

DESCRIPTION: A PROSTRATE PERENNIAL IN THE SUNFLOWER FAMILY. STEMS AND

LEAVES ARE DENSELY HAIRY. FLOWERS LOOK LIKE SMALL DELICATE

DAISIES, WITH WHITE TO LIGHT PURPLE OUTER PETALS AND YELLOW

INNER PETALS.

COUNTIES: COCHISE

HABITAT: GROWS IN DENSE CLUMPS IN CREVICES, LEDGES, AND BOULDERS IN CANYON BOTTOMS IN PINE-OAK WOODLAND

NAME: HUACHUCA SPRINGSNAIL

PYRGULOPSIS THOMPSONI

STATUS: CATEGORY-1

CRITICAL HABITAT: No

RECOVERY PLAN: No

CFR:  

DESCRIPTION: VERY SMALL (1.7-3.2MM) CONICAL SHELL. IDENTIFICATION MUST BE

VERIFIED BY CHARACTERISTICS OF REPRODUCTIVE ORGANS.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: AQUATIC AREAS, SMALL SPRINGS WITH VEGETATION SLOW TO MODERATE FLOW.

INDIVIDUALS FOUND ON FIRM SUBSTANCES (ROOTS, WOOD, AND ROCKS)
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "COCHISE"

NAME: CHIRICAHUA LEOPARD FROG  
*RANA CHIRICAHUENSIS*

STATUS: CATEGORY-1  
CRITICAL HABITAT: No  
RECOVERY PLAN: No  
CFR: 59 FR 58996

DESCRIPTION: CREAM-COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH. DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIANALLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPARD FROGS. RANGE: 3000-8300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH AND BULLFROGS.

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES.

NAME: RAMSEY CANYON LEOPARD FROG  
*RANA SUBAGUAVOCALIS*

STATUS: CATEGORY-1  
CRITICAL HABITAT: No  
RECOVERY PLAN: No  
CFR: 59 FR 58996

DESCRIPTION: LARGE FROG WITH CREAM-COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH. TYPICALLY SPOTTED AND GREEN. CALL GIVEN UNDERWATER.

ELEVATION RANGE: 5000-5700 FT.

COUNTIES: COCHISE

HABITAT: ARTIFICIAL PONDS IN TINKER, BROWN, AND RAMSEY CANYONS ON THE EAST SLOPE OF THE HUACHUCA MOUNTAINS.
LISTED PROPOSED, AND CANDIDATE CATEGORY-I SPECIES FOR THE FOLLOWING COUNTY: "PIMA"

LISTED TOTAL= 15

NAME: KEARNEY'S BLUE STAR
AMSONIA KEARNEYANA
STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 54 FR 2131, 01-19-1989
DESCRIPTION: A HERBACEOUS PERENNIAL IN THE DOGBANE FAMILY (APOCYNACEAE). THICKENED WOODY ROOT AND MANY PUBESCENT (HAIRY) STEMS THAT RARELY BRANCH. FLOWERS: WHITE TERMINAL INFLORESCENCE IN APRIL & MAY.
ELEVATION RANGE: 3600-3800 FT.
COUNTIES: PIMA
HABITAT: WEST-FACING DRAINAGES IN THE BABOQUIVARI MOUNTAINS.

NAME: NICHOL'S TURK'S HEAD CACTUS
ECHINOCACTUS HORIZONTHALONIUS VAR NICHOLI
STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: No
CFR: 44 FR 61927, 10-26-1979
DESCRIPTION: BLUE-GREEN TO YELLOWISH-GREEN. COLUMNAR 18 INCHES TALL & 8 INCHES IN DIAMETER. SPINE CLUSTERS HAVE 5 RADIAL & 3 CENTRAL SPINES: ONE DOWNWARD SHORT; 2 SPINES UPWARD AND RED OR BASALLY GRAY. FLOWER: PINK FRUIT: WOOLLY WHITE
ELEVATION RANGE: 2400-4100 FT.
COUNTIES: PINAL, PIMA, YUMA
HABITAT: SONORAN DESERTSCrub

NAME: PIMA PINEAPPLE CACTUS
CORYPHANTHA SCHEERI ROBUSTISPINA
STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: No
CFR: 57 FR 14374, 04-20-1992
DESCRIPTION: HEMISPHERICAL STEMS 4-7 INCHES TALL & 3-4 INCHES DIAMETER. CENTRAL SPINE 1 INCH LONG STRAW COLORED HOOKED SURROUNDED BY 6-15 RADIAL SPINES. FLOWER: YELLOW SALMON OR RARELY WHITE NARROW FLORAL TUBE.
ELEVATION RANGE: 2300-5000 FT.
COUNTIES: PIMA, SANTA CRUZ
HABITAT: SONORAN DESERTSCrub OR SEMI-DESERT GRASSLAND COMMUNITIES

FOUND IN UNSHADED MICROSPITES IN SONORAN DESERTSCrub ON DISSECTED ALLUVIAL FANS AT THE FOOT OF LIMESTONE MOUNTAINS AND ON INCLINED TERRACES AND SADDLES ON LIMESTONE MOUNTAINSIDES. NEW POPULATION ON YUMA PROVING GROUNDS.

OCCURS IN ALLUVIAL VALLEYS OR ON HILLSIDES IN ROCKY TO SAN'Y OR SILTY SOILS. THIS SPECIE CAN BE CONFUSED WITH JUVENILE BARREL CACTUS (FEROCACTUS). HOWEVER, THE SPINES OF THE LATER ARE FLATTENED, IN CONTRAST WITH THE ROUND CROSS-SECTION OF TI. CORYPHANTHA SPINES. ALSO THE AREOLES (SPINE CLUSTERS) OF CORYPHANTHA ARE ON TUBERCULES (BUMPS), WHILE THE AREOLES OF FEROCACTUS ARE ON RIDGES (RIBS).
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTIES: *PIMA*

NAME: **JAGUARUNDI**

**FELIS YAGOUAROUNDI TOLTECA**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:** 41 FR 24064, 05-14-76

**DESCRIPTION:** SMALL CAT WITH SHORT LEGS; SLENDER ELONGATE BODY, AND LONG TAIL. HEAD SMALL & FLATTENED WITH SHORT ROUNDED EARS. REDDISH-YELLOW OR BLACKISH TO BROWN-GRAY IN COLOR AND WITHOUT SPOTS.  
**ELEVATION RANGE:** 3500-6000 FT.

**COUNTIES:** SANTA CRUZ, PIMA, COCHISE

**HABITAT:** CAN BE FOUND IN A VARIETY OF HABITATS (SEE BELOW)

SEMI-ARID THORNY FORESTS, DECIDOUS FORESTS, HUMID PRE-MONTANE FORESTS, UPLAND DRY SAVANNAHS, SWAMPY GRASSLANDS, RIPARIAN AREAS, AND DENSE BRUSH. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. NO SPECIMENS HAVE BEEN COLLECTED IN ARIZONA.

NAME: **LESSER LONG-NOSED BAT**

**LEPTONYCTERIS CURASOAE YERBABUENAE**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:** 53 FR 38456, 09-30-88

**DESCRIPTION:** ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.  
**ELEVATION RANGE:** <6000 FT.

**COUNTIES:** COCHISE, PIMA, SANTA CRUZ, GRAHAM, PINAL, MARICOPA

**HABITAT:** DESERT SCRUB HABITAT WITH AGAVE AND COLUMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: **MEXICAN GRAY WOLF**

**CANIS LUPUS BAILEYI**

**STATUS:** ENDANGERED  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** Yes  
**CFR:** 32 FR 4001, 03-11-57; 43 FR 1912, 03-09-78

**DESCRIPTION:** LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR, BUT USUALLY A SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH 60-90 POUNDS.  
**ELEVATION RANGE:** 4,000-12,000 FT.

**COUNTIES:** COCHISE, PIMA, SANTA CRUZ

**HABITAT:** CHAPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: *PIMA*

**Name: Ocelot**  
*FELIS PARDALIS*

**Status:** Endangered  
**Critical Habitat:** No  
**Recovery Plan:** Yes  
**CFR:** 47 FR 31670; 07-21-82

**Description:** Medium-sized spotted cat whose tail is about 1/2 the length of head and body. Yellowish with black streaks and stripes running from front to back. Tail is spotted and face is less heavily streaked than the back and sides.

**Counties:** Santa Cruz, Pima, Cochise

**Habitat:** Humid tropical & sub-tropical forests, savannas, and semi-arid thorns scrub.

May persist in partly-cleared forests, second-growth woodland, and abandoned cultivation reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the state continue to be received.

**Name: Sonoran Pronghorn**  
*ANTILOCAPRA AMERICANA SONORIENSIS*

**Status:** Endangered  
**Critical Habitat:** No  
**Recovery Plan:** Yes  
**CFR:** 32 FR 4001, 03-11-67

**Description:** Buff on back and white below. Hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies.

**Counties:** Pima, Yuma, Maricopa

**Habitat:** Broad, intermountain alluvial valleys with creosote-bursage & palo verde-mixed cacti associations

Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Historic range was probably larger than exists today. This subspecies also occurs in Mexico.

**Name: Desert Pupfish**  
*CYPRINODON MACULARIUS*

**Status:** Endangered  
**Critical Habitat:** Yes  
**Recovery Plan:** Yes  
**CFR:** 51 FR 10842, 03-31-1986

**Description:** Small (2 inches) smoothly rounded body shape with narrow vertical bars on flanks. Breeding males blue on head and sides with yellow on tail. Females & juveniles tan to olive colored back and silvery sides.

**Counties:** La Paz, Pima, Graham, Maricopa, Pinal, Yavapai, Santa Cruz

**Habitat:** Shallow springs, small streams, and marshes. Tolerates saline & warm water

**Critical Habitat includes Quitobaquito Spring, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. Two subspecies are recognized: Desert Pupfish (C. m. macularia) and Quitobaquito Pupfish (C. m. eremus).**
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "PIMA"

NAME: GILA TOPMINNOW
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS

STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES), GUPPY-LIKE. LIVE Bearing UCks DARK POS ON ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.

COUNTIES: GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ
HABITAT: SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWS

NAME: AMERICAN PEREGRINE FALCON
FALCO PEREGRINUS ANATUM

STATUS: ENDANGERED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 35 FR 16047, 10-13-70
FR 8495, 06-02-70

DESCRIPTION: A RECLUSIVE. CROW-SIZED FALCON SLATY BLUE ABOVE WHITISH BELOW WITH FINE DARK BARRING. THE HEAD IS BLACK AND APPEARS TO BE MASKED OR HELMETED. WINGS LONG AND POINTED. LOUD WAILING CALLS ARE GIVEN DURING BREEDING PERIOD.

ELEVATION RANGE: 3500-9000 FT.
COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, SANTA CRUZ, MARICOPA, COCHISE, YAVAPAI, GILA, PINAL, PIMA, GREER, LEE, GRAHAM
HABITAT: CLIFFS AND STEEP TERRAIN USUALLY NEAR WATER OR WOODLANDS WITH ABUNDANT PREY

THIS IS A WIDE RANGING MIGRATORY BIRD THAT USES A VARIETY OF HABITATS. BREEDING BIRDS ARE YEAR-ROUND RESIDENTS, OTHER BIRDS WINTER AND MIGRATE THROUGH ARIZONA. SPECIES IS ENDANGERED FROM REPRODUCTIVE FAILURE FROM PESTICIDES.

NAME: BALD EAGLE
HALIAEETUS LEUCOCEPHALUS

STATUS: THREATENED
CRITICAL HABITAT: No
RECOVERY PLAN: Yes
CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38". WINGSpan 66 - 96". 1- YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PAPILLAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.
COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM
HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967, 43 FR 8233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT. THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "PIMA"

NAME: MASKED BOBWHITE

STATUS: ENDANGERED

CRITICAL HABITAT: No

RECOVERY PLAN: Yes

CFR: 35 FR 4001, 03-11-1967; 35 FR 8495, 06-02-70

DESCRIPTION: MALES BRICK-RED BREAST AND BLACK HEAD AND THROAT. FEMALES ARE GENERALLY NONDESCRIPT BUT RESEMBLE OTHER RACES SUCH AS THE TEXAS BOBWHITE.

COUNTIES: PIMA

HABITAT: DESERT GRASSLANDS WITH DIVERSITY OF DENSE NATIVE GRASSES, FORBS AND BRUSH

SPECIES IS CLOSELY ASSOCIATED WITH ACACIA ANGSTISSIMA. FORMERLY OCCURRED IN ALTAR AND SANTA CRUZ VALLEYS, AS WELL AS SONORA, MEXICO. PRESENTLY ONLY KNOWN FROM REINTRODUCED POPULATION ON BUENOS AWFJ..S.

NAME: MEXICAN SPOTTED OWL

STATUS: THREATENED

CRITICAL HABITAT: Yes

RECOVERY PLAN: Yes

CFR: 56 FR 14678, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NES:TS IN OLDER FORESTS OF MIXED CONIFER OR PONDEROSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: SOUTHWESTERN WILLOW FLYCATCHER

STATUS: ENDANGERED

CRITICAL HABITAT: Yes

RECOVERY PLAN: No

CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMpidONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS.
PROPOSED  TOTAL=  4

NAME:  HUACHUCA WATER UMBEL  LILAEOPSIS SCHAFFNERIANA  ssp RECURVA

STATUS:  PROPOSED ENDANGERED  CRITICAL HABITAT:  No  RECOVERY PLAN:  No  CFR:  60 FR 16836, 4-3-1995
DESCRIPTION:  HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY (UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10 FLOWOERED UMBELS ARISE FROM ROOT NODES.
ELEVATION RANGE:  3500-6500 FT.
COUNTRIES:  PIMA, SANTA CRUZ, COCHISE
HABITAT:  CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

NAME:  SAN XAVIER TALUSSNAIL  SONORELLA EREMITA

DESCRIPTION:  LESS THAN ONE INCH (AVE 19 MM), LIGHT BROWN, PILL SHAPED, DARK STRIPE ENCIRCLES OUTER PERIMETER
ELEVATION RANGE:  3850 - 3920 FT.
COUNTRIES:  PIMA
HABITAT:  LIMESTONE TALUS ON NORTH SIDE OF A SINGLE HILL

NAME:  JAGUAR, UNITED STATES POPULATION  PANTHERA ONCA

DESCRIPTION:  MUSCULAR CAT WITH RELATIVELY SHORT, MASSIVE LIMBS AND A DEEP-CHESTED BODY. CINNAMON-BUFF IN COLOR WITH BLACK SPOTS.
ELEVATION RANGE:  <8000 FT.
COUNTRIES:  COCHISE, PIMA, SANTA CRUZ
HABITAT:  IN ARIZONA. RANGED WIDELY THROUGHOUT A VARIETY OF HABITATS FROM SONORAN DESERT TO CONIFER FORESTS

MOST RECORDS ARE FROM THE MADREAN EVERGREEN-WOODLAND, SHRUB-INVADED SEMI-DESERT GRASSLAND AND ALONG RIVERS. HISTORIC RANGE IS CONSIDERED TO HAVE EXTENDED BEYOND THE COUNTIES LISTED ABOVE. REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED. THIS SPECIES IS LISTED AS ENDANGERED FROM THE U.S.-MEXICO BORDER SOUTH. LAST CONFIRMED INDIVIDUAL WAS KILLED IN ARIZONA IN 1991, SINCE THEN UNCONFIRMED SIGHTINGS AND TRACKS CONTINUE TO BE REPORTED.
NAME: CACTUS FERRUGINOUS PYGMY-OWL

STATUS: PROPOSED ENDANGERED

DESCRIPTION: SMALL (APPROX. 7”), DIURNAL OWL. REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, YAVAPAI

HABITAT: MATURE COTTONWOOD/MILLOW, MESQUITE BOSQUES, AND DESERT SCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT HAS BEEN PROPOSED FOR THIS SPECIES.
LISTED, PROPOSED, AND CANDIDATE CATEGORY-1 SPECIES FOR THE FOLLOWING COUNTY: "PIMA"

CANDIDATE TOTAL = 4

NAME: **ACUNA CACTUS**

**ECHINOMASTUS ERECTOCENTRUS ACUNENSIS**

**STATUS:** CATEGORY-1  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:**

**DESCRIPTION:** <12 INCHES HIGH SPINE CLUSTERS BORNE ON TUBERCLES, EACH WITH A GROOVE ON THE UPPER SURFACE. 2-3 CENTRAL SPIKES AND 12 RADIAL SPIKES. FLOWERS PINK TO PURPLE

**ELEVATION RANGE:** 1300-2000 FT.

**COUNTIES:** PINAL, PIMA

**HABITAT:** WELL DRAINED KNOLLS AND GRAVEL RIDGES IN SONORAN DESERT SCRUB

IMMATURE PLANTS DISTINCTLY DIFFERENT FROM MATURE PLANTS. THEY ARE DISC-SHAPED OR SPHERICAL AND HAVE NO CENTRAL SPIKES UNTIL THEY ARE ABOUT 1.5 INCHES. CENTRAL SPIKES ARE DIRTY WHITE WITH MAROON TIPS.

NAME: **GENTRY INDIGO BUSH**

**DALEA TENTACULOIDES**

**STATUS:** CATEGORY-1  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:**

**DESCRIPTION:** SHRUBBY PERENNIAL IN THE LEGUMEOSE FAMILY WITH NUMEROUS STEMS IN OLDER PLANTS, UP TO 6-7 FEET TALL USUALLY LESS. FLOWERS: SMALL ROSE-PURPLE APPEAR IN APRIL-JUNE OR SEPT-OCT.

**ELEVATION RANGE:** 4500 FT.

**COUNTIES:** SANTA CRUZ, PIMA

**HABITAT:** FLOODPLAIN TERRACES IN DRY CANYON RIPARIAN AREAS IN PARTIAL SHADE

NAME: **GOODDING ONION**

**ALLIUM GOODDINGII**

**STATUS:** CATEGORY-1  
**CRITICAL HABITAT:** No  
**RECOVERY PLAN:** No  
**CFR:**

**DESCRIPTION:** PERENNIAL ONION WITH WIDER LEAVES THAN OTHER ARIZONA ONIONS. FLOWERS RED-PURPLE WITH SIX PETALS ON A SCAPE TALLER THAN THE LEAVES

**ELEVATION RANGE:** 7000-9400 FT.

**COUNTIES:** GREENLEE, APACHE, PIMA

**HABITAT:** MATURE FORESTS USUALLY ALONG NORTH-TRENDING DRAINAGE BOTTOMS IN MIXED-CONIFER SPRUCE-FIR ZONES
NAME: CHIRICAHUA LEOPARD FROG

RANA CHIRICAHUENSIS

STATUS: CATEGORY-1
CRITICAL HABITAT: No
RECOVERY PLAN: No
CFR: 59 FR 55996

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON
THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE
INTERRUPTED AND DEFLECTED MEDially, AND A CALL GIVEN OUT OF
WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD

ELEVATION: RANGE: 3000-8300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH
AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE
THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES.
### RARE, THREATENED, AND ENDANGERED SPECIES IN THE REGION OF ABANDONMENTS AND/OR CONSTRUCTION SITES IN ARKANSAS

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat floater</td>
<td>Anodonta suborbiculata</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Lake sturgeon</td>
<td>Acipenser fulvescens</td>
<td>S(SS):F(C2)</td>
</tr>
<tr>
<td>Lake chubsucker</td>
<td>Erimyzon succetta</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Goldstripe darter</td>
<td>Etheostoma parvipinne</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Swamp darter</td>
<td>Etheostoma fasiforme</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Bluehead shiner</td>
<td>Notropis hubbsi</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Blackspot shiner</td>
<td>Notropis atrocaudalis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Red River shiner</td>
<td>Notropis bairdi</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Taillight shiner</td>
<td>Notropis maculatus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Peppered shiner</td>
<td>Notropis perpallidus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Darter</td>
<td>Percina sp.</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Crystal darter</td>
<td>Crystallaria asprella</td>
<td>S(SS):F(C3)</td>
</tr>
<tr>
<td>Bird-voiced treefrog</td>
<td>Hyla avivoca</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Razorback musk turtle</td>
<td>Sternotherus carinatus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Graham’s crayfish snake</td>
<td>Regina grahamii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Gray rat snake</td>
<td>Elaphe obsoleta spiloides</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Green water snake</td>
<td>Nerodia cyclopion</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Gulf crayfish snake</td>
<td>Regina rigida sinicola</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Texas coral snake</td>
<td>Micrurus fulvias cenere</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Anhinga</td>
<td>Anhinga anhinga</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Great egret</td>
<td>Casmeroidens albus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Least bittern</td>
<td>Ixobryehus exilis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Hooded merganser</td>
<td>Lophodytes cucullatus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Bald eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>S(SS):F(T)</td>
</tr>
<tr>
<td>Common barn-owl</td>
<td>Tyto alba</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Common moorhen</td>
<td>Gallinula chloropus</td>
<td>S(SS)</td>
</tr>
</tbody>
</table>
### RARE, THREATENED, AND ENDANGERED SPECIES IN THE REGION OF ABANDONMENTS AND/OR CONSTRUCTION SITES IN ARKANSAS

(continued)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior least tern</td>
<td>Sterna antillarum othalases</td>
<td>F(E):S(SS)</td>
</tr>
<tr>
<td>Red-cockaded woodpecker</td>
<td>Picoides borealis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Great-tailed grackle</td>
<td>Quiscalus mexicanus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Bachman’s sparrow</td>
<td>Aimophila aestivalis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Grasshopper sparrow</td>
<td>Ammodramus savannarum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Backman’s warbler</td>
<td>Vermivora backmanii</td>
<td>S(SS):F(E)</td>
</tr>
<tr>
<td>Swainson’s warbler</td>
<td>Limnothypis swainsonii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Southern myotis</td>
<td>Myotis austroriparius</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Florida panther</td>
<td>Felis concolor coryi</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Arkansas meadow-rue</td>
<td>Thalictrum arkananum</td>
<td>S(T):F(C2)</td>
</tr>
<tr>
<td>Arkansas oak</td>
<td>Quercus arkansana</td>
<td>S(SS):F(C3)</td>
</tr>
<tr>
<td>Barbed rattlesnake root</td>
<td>Prenanthes barbata</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Blueberry hawthorn</td>
<td>Crat brachyacantha</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Bristly greenbriar</td>
<td>Smilax tamnoides</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Brown creeper</td>
<td>Certha americana</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Celestial lily</td>
<td>Nemystis geminiflora</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Climbing milkweed</td>
<td>Matelea cyanoides</td>
<td>S(E)</td>
</tr>
<tr>
<td>Coral greenbrier</td>
<td>Smilax walteri</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Corkwood</td>
<td>Leitneria floridana</td>
<td>S(SS)</td>
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<tr>
<td>Crotalaria</td>
<td>Crotalaria angulata</td>
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</tr>
<tr>
<td>Devil’s-bit</td>
<td>Chamaelium luteum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Eastern featherbells</td>
<td>Stenanthes gramineum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Eve’s necklace</td>
<td>Sophora affinis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Evening primrose</td>
<td>Oenothera rhombipetala</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Foxglove</td>
<td>Agalinis aspera</td>
<td>S(SS)</td>
</tr>
</tbody>
</table>
**RARE, THREATENED, AND ENDANGERED SPECIES IN THE REGION OF ABANDONMENTS AND/OR CONSTRUCTION SITES IN ARKANSAS**

(continued)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden ciliroot</td>
<td>Aletris aurea</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Golden-mane tickseed</td>
<td>Coreopsis basalis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Goldenrod</td>
<td>Solidago nitida</td>
<td>S(SS)</td>
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<tr>
<td>Green-eyes</td>
<td>Berlandiera betonicifolia</td>
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<tr>
<td>Hairy gramma</td>
<td>Bouteloua hirsuta</td>
<td>S(E)</td>
</tr>
<tr>
<td>Heliotrope</td>
<td>Heliotropium convolvulaceum</td>
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<tr>
<td>Hurter's spadeflower</td>
<td>Scaphiopus holbrookii hurterii</td>
<td>S(SS)</td>
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<tr>
<td>Hyssopleaf thoroughwort</td>
<td>Eupatorium hyssopifolium</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Large clammy-weed</td>
<td>Polanisia crosa</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Larkspur</td>
<td>Delphinium carolinianum vinineum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Little-leaved prairie clover</td>
<td>Dalea phleodes microphylla</td>
<td>S(T)</td>
</tr>
<tr>
<td>Long's stargrass</td>
<td>Hypoxis lungii</td>
<td>S(SS);F(C3)</td>
</tr>
<tr>
<td>Louisiana vetch</td>
<td>Vicia ludoviciana</td>
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</tr>
<tr>
<td>Many-flowered wild-buckwheat</td>
<td>Eriogonum multiflorum</td>
<td>S(SS)</td>
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<tr>
<td>Milk-vetch</td>
<td>Astragalus leptocarpus</td>
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</tr>
<tr>
<td>Nerve-ray</td>
<td>Tetragnotheca ludoviciana</td>
<td>S(E)</td>
</tr>
<tr>
<td>Pink heel-splitter</td>
<td>Potamilus altus</td>
<td>S(E)</td>
</tr>
<tr>
<td>Prairie clover</td>
<td>Dalea villosangrissea</td>
<td>S(E)</td>
</tr>
<tr>
<td>Purple pleat-leaf</td>
<td>Alophia drummodii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Red bay</td>
<td>Persea palustris</td>
<td>S(E)</td>
</tr>
<tr>
<td>Riddell’s spike moss</td>
<td>Selaginella arenicola ridellii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Rose pogonia</td>
<td>Pogonia ophioglossoides</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Scarlet beardtongue</td>
<td>Penstemon murrayanus</td>
<td>S(T)</td>
</tr>
<tr>
<td>Scratch-daisy</td>
<td>Croptilon hookeranum</td>
<td>S(SS)</td>
</tr>
</tbody>
</table>
RARE, THREATENED, AND ENDANGERED SPECIES IN THE REGION OF ABANDONMENTS AND/OR CONSTRUCTION SITES IN ARKANSAS

(continued)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scurf pea</td>
<td>Psoralea digitata parvifolia</td>
<td>S(T)</td>
</tr>
<tr>
<td>Sedge</td>
<td>Balbostylis capillaris</td>
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<tr>
<td>Shorthead redhorse</td>
<td>Moxostoma macrolepidotum</td>
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<tr>
<td>Showy prairie-gentian</td>
<td>Eustoma grandiflorum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Silky camellia</td>
<td>Stewartia malacodendron</td>
<td>S(E)</td>
</tr>
<tr>
<td>Smooth twistflower</td>
<td>Streptanthus hyacinthoides</td>
<td>S(T)</td>
</tr>
<tr>
<td>Soapwort gentian</td>
<td>Gentiana saponaria</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Southern bog clubmoss</td>
<td>Lycopodium appressum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Southern lady’s slipper</td>
<td>Cypripedium kentuckiense</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Soxman’s milk-vetch</td>
<td>Astragalus soxmaniorum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Spanish moss</td>
<td>Tillandsia uspeoides</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Soapwort</td>
<td>Tradescantia reverchonii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Stylisma styrhisnia</td>
<td>Stylisma aquatic</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Stylisma styrhisnia pickeringii</td>
<td>Stylisma pickeringii pattersonii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Sweetscent ladies’ tresses</td>
<td>Spiranthes odorata</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Three-way sedge</td>
<td>Dulichium arundinaceum</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Tragia</td>
<td>Tragia smallii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Tuberous grass-pink</td>
<td>Calopogon tuberosus</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Umbrella grass</td>
<td>Puirena bushii</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Umbrella sedge</td>
<td>Cyperus grayoides</td>
<td>S(SS);F(C2)</td>
</tr>
<tr>
<td>Wild plum</td>
<td>Prunus gracilis</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Woolly three-awn</td>
<td>Aristida lanosa</td>
<td>S(SS)</td>
</tr>
<tr>
<td>Yellow-creasted orchid</td>
<td>Platanthera cristata</td>
<td>S(SS)</td>
</tr>
</tbody>
</table>

F = Federal;  
S = State;  
(E) = Endangered;
RARE, THREATENED, AND ENDANGERED SPECIES
IN THE REGION OF ABANDONMENTS AND/OR CONSTRUCTION SITES
IN ARKANSAS
(concluded)

(T)  = Threatened;
(C2) = Category 2 Candidate;
(C3) = Category 3 Candidate;
(SS) = Special Species, in several levels
### ADDITIONAL INFORMATION ON RARE, THREATENED, AND ENDANGERED SPECIES IN THE AREA OF CONSTRUCTION SITES IN ARKANSAS

<table>
<thead>
<tr>
<th>Location</th>
<th>Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area</th>
</tr>
</thead>
</table>
| Camden  | Scarlet beardtongue  
|         | Smooth twistflower  
|         | Silky camellia  
|         | Red-cockaded woodpecker  
|         | Lake sturgeon  
|         | Anhinga  
|         | Crystal darter  
|         | Lake chubsucker  
|         | Bird-voiced treefrog  
|         | Texas coral snake  
|         | Southern myotis  
|         | Bluehead shiner  
|         | Harter's spadeflower  
|         | Purple pleat-leaf  
|         | Woolly three-awn  
|         | Milk-vetch  
|         | Soxman's milk-vetch  
|         | Sedge  
|         | Devil's-bit  
|         | Golden-mane tickseed  
|         | Umbrella sedge  
|         | Larkspur  
|         | Three-way sedge  
|         | Many-flowered wild-buckwheat  
|         | Evening primrose  
|         | Large clammy-weed  
|         | Arkansas oak  
|         | Riddell's spike moss  
|         | Coral greenbrier  
|         | Goldenrod  
|         | Stylistis (S. aquatica)  
|         | Stylistis (S. pickeringii)  
|         | Crotalaria  
|         | Peppered shiner  
|         | Darter  
|         | Gulf crayfish snake |
ADDITIONAL INFORMATION ON RARE, THREATENED, 
AND ENDANGERED SPECIES IN THE AREA OF CONSTRUCTION SITES 
IN ARKANSAS 
(continued)

<table>
<thead>
<tr>
<th>Location</th>
<th>Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area</th>
</tr>
</thead>
</table>
| Pine Bluff-East| Red-cockaded woodpecker 
Bachman's sparrow 
Goldstripe darter 
Florida panther 
Common moorhen 
Bald eagle 
Least bittern 
Swainson's warbler 
Shorthead redhorse 
Green water snake 
Bluehead shiner 
Tailhead shiner 
Graham's crayfish snake 
Gulf crayfish snake 
Common barn-owl 
Tuberous grass-pink 
Devil's-bit 
Scratch-daisy 
Southern lady's slipper 
Hyssop leaf thoroughwort 
Showy prairie-gentian 
Umbrella grass 
Soapwort gentian 
Heliotrope 
Corkwood 
Celestial lily 
Yellow-crested orchid 
Rose pogonia 
Barbed mulesnake root |
| Pine Bluff-West| (same as Pine Bluff-East)                                                             |
ADDITIONAL INFORMATION ON RARE, THREATENED, AND ENDANGERED SPECIES IN THE AREA OF CONSTRUCTION SITES IN ARKANSAS

<table>
<thead>
<tr>
<th>Location</th>
<th>Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area</th>
</tr>
</thead>
</table>
| Texarkana-SE | Re ‐ cockaded woodpecker  
Hairy grama  
Climbing milkweed  
Red bay  
Scurf pea  
Nerve-ray  
Little‐leaved prairie clover  
Prairie clover  
Smooth twistflower  
Arkansas meadow‐roe  
Flat Floater  
Grasshopper sparrow  
Great egret  
Goldstripe darter  
Green water snake  
Blackspot shiner  
Red River shiner  
Great-tailed grackle  
Hurter's spadeflower  
Razorback musk turtle  
Foxglove  
Golden colicroot  
Purple pleat-leaf  
Woolly three‐awn  
Milk ‐ vetch  
Sp: amar’s milk‐vetch  
Green ‐ eyes  
Sedge  
Blueberry hawthorn  
Larkspur  
Long's stargrass  
Southern bog clubmoss  
Evening primrose  
Wild plum  
Arkansas oak  
Riddell’s spike moss  
Eve's necklace  
Sweet‐scented ladies' tresses  
Eastern feather‐bells  
Spanish moss  
Climbing milkweed  
Red bay  
Spiderwort  
Trawia  
Louisiana Vetch  |
| Texarkana   | (same as Texarkana-SE) |
| West Memphis | Flat floater  
Pink heel‐splitter  
Brown creeper  
Gray rat snake  
Swamp darter  
Bald eagle  
Hooded merganser  
Taillight shiner  
Interior least tern  
Backman's warbler  
Briskly greenbriar |
### Rare, Threatened, and Endangered Species in the Area of Abandonments and/or Construction Sites in California

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley elderberry longhorn beetle</td>
<td>Desmocerus californicus dimorphus</td>
<td>F(T)</td>
</tr>
<tr>
<td>Delhi sands flower-loving fly</td>
<td>Rhaphiomidas terminatus abdominalis</td>
<td>F(E)</td>
</tr>
<tr>
<td>Lahontan cutthroat trout</td>
<td>Onchorynchus clarki henshawi</td>
<td>F(T)</td>
</tr>
<tr>
<td>California tiger salamander</td>
<td>Ambystoma californiense</td>
<td>(S)SS; F(E)</td>
</tr>
<tr>
<td>Coachella Valley fringe-toed lizard</td>
<td>Uma inornata</td>
<td>S(E); F(T)</td>
</tr>
<tr>
<td>Flat-tailed horned lizard</td>
<td>Phrynosoma mealli</td>
<td>S(SS); F(PT)</td>
</tr>
<tr>
<td>Giant garter snake</td>
<td>Thamnophis gigas</td>
<td>S(T); F(T)</td>
</tr>
<tr>
<td>Swainson's hawk</td>
<td>Buteo swainsoni</td>
<td>S(T)</td>
</tr>
<tr>
<td>Greater sandhill crane</td>
<td>Grus canadensis tabida</td>
<td>S(T)</td>
</tr>
<tr>
<td>Western yellow-billed cuckoo</td>
<td>Coccyzus americanus occidentalis</td>
<td>S(E)</td>
</tr>
<tr>
<td>Northern spotted owl</td>
<td>Strix occidentalis caurina</td>
<td>F(T)</td>
</tr>
<tr>
<td>California gnatcatcher</td>
<td>Polioptila californica</td>
<td>S(SS); F(T)</td>
</tr>
<tr>
<td>Stephens' kangaroo rat</td>
<td>Dipodomys stephensi</td>
<td>S(T); F(E)</td>
</tr>
<tr>
<td>San Joaquin kit fox</td>
<td>Vulpes macrotis mutica</td>
<td>S(T); F(E)</td>
</tr>
<tr>
<td>California wolverine</td>
<td>Gulo gulo luteus</td>
<td>S(T); F(C2)</td>
</tr>
<tr>
<td>Large flowered fiddleneck</td>
<td>Amsinckia grandiflora</td>
<td>S(E); F(E)</td>
</tr>
<tr>
<td>Coachella Valley milk-vetch</td>
<td>Astragalus lentiginosus coachellae</td>
<td>F(PE)</td>
</tr>
<tr>
<td>Pierson's milk-vetch</td>
<td>Astragalus magdaleneae peirsonii</td>
<td>S(E); F(PE)</td>
</tr>
<tr>
<td>Bogg's lake hedge-hyssop</td>
<td>Gratiola heterosepala</td>
<td>S(E); F(C3)</td>
</tr>
<tr>
<td>Algodonede's Dunes sunflower</td>
<td>Helianthus niveus teprodes</td>
<td>S(E); F(C2)</td>
</tr>
<tr>
<td>Santa Cruz tarplant</td>
<td>Holocarpha macradenia</td>
<td>S(E); F(C1)</td>
</tr>
<tr>
<td>California sea blite</td>
<td>Sueda californica</td>
<td>F(PE)</td>
</tr>
</tbody>
</table>

- **F** = Federal;  
- **S** = State;  
- *(E)* = Endangered;  
- *(PE)* = Proposed Endangered;  
- *(T)* = Threatened;  
- *(PT)* = Proposed Threatened;  
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### Rare, Threatened, and Endangered Species in the Region of Abandonments and/or Construction Sites in California

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<td>S(E); F(C2)</td>
</tr>
<tr>
<td>Santa Cruz s.a blite</td>
<td><em>Holocarpha macradenia</em></td>
<td>S(E); F(C1)</td>
</tr>
<tr>
<td>California s.a blite</td>
<td><em>Sueda californica</em></td>
<td>F(PE)</td>
</tr>
</tbody>
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- (E) = Endangered;
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- (C3) = Category 3 Candidate;
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ENCLOSURE A

LISTED AND PROPOSED ENgrengerED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR OR BE AFFECTED BY PROJECTS IN THE AREA OF
THE FOLLOWING SELECTED QUADS:
Reference File No. 1-1-96-TA-25
October 12, 1995

QUAD: 465C

Oakland East

Listed Species

Mammals
- salt marsh harvest mouse, *Reithrodontomys raviventris* (E)

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)

Fish
- tidewater goby, *Eucyclogobius newberryi* (E)

Invertebrates
- vernal pool fairy shrimp, *Branchinecta lynchi* (T)

Plants
- robust spineflower, *Chorizanthe robusta* (E)
- *Prairieo clarida, Clarkia trendscana* (E)

Proposed Species

Reptiles
- Alamada whipsnake, *Masticophis lateralis euryxanthus* (PE)

Amphibians
- California red-legged frog, *Rana aurora draytoni* (PE)

Invertebrates
- callippe silverspot butterfly, *Speyeria callippe callippe* (PE)

Plants
- palid manzanita (Alameda manzanita), *Arctostaphylos pallida* (PT)

Candidate Species

Mammals
- San Joaquin Valley woodrat, *Neotoma fuscipes riparia* (1)
- greater western mastiff-bat, *Eumops perotis californicus* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- San Francisco dusky-footed woodrat, *Neotoma fuscipes annelcens* (2)
- San Joaquin pocket mouse, *Perognathus inoratus* (2)
- Pacific western big-eared bat, *Plecotus townsendii townsendii* (2)
- Alamada Island mole, *Scapanus latimanus parvus* (2)
Candidate Species

Birds
- tricolored blackbird, *Agelaius tricolor* (2)
- Bell's sage sparrow, *Amphispiza belli belli* (2)
- ferruginous hawk, *Buteo regalis* (2)
- little willow flycatcher, *Empidonax traillii brewsteri* (2)
- saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (2)
- black rail, *Laterallus jamaicensis* (2)
- Alameda (South Bay) song sparrow, *Melospiza melodia maxillaris* (2)

Reptiles
- northwestern pond turtle, *Clemmys marmorata marmorata* (2)
- southwestern pond turtle, *Clemmys marmorata pallida* (2)
- California horned lizard, *Phrynosoma coronatum frontale* (2)

Amphibians
- California tiger salamander, *Ambystoma californiense* (1)
- foothill yellow-legged frog, *Rana boylii* (2)
- western spadefoot toad, *Scaphiopus hammondii* (2)

Invertebrates
- Ricksecker's water scavenger beetle, *Hydrochera rickseckon* (2)
- San Francisco lacewing, *Notochrysa californica* (2)

Plants
- most beautiful (uncommon) jewelflower, *Streptanthus albidos ssp. peramoenus* (1)
- fragrant fritillary, *Fritillaria liliacea* (2)
- Diablo rock-rose, *Helianthea castanea* (2)
- Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata ssp. saricca* (2)
- alkali miik-vetch, *Astragalus tener var. tener* (2R)

Listed Species

Mammals
- salt marsh harvest mouse, *Reithrodontomys raviventris* (E)

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E)
- California least tern, *Sterna antillarum (=albifrons) browni* (E)
- western snowy plover, *Charadrius alexandrinus nivosus* (T)
- bald eagle, *Haliaeetus leucocephalus* (T)
QUAD: 466D OAKLAND WEST

Listed Species

Fish
- tidewater goby, *Eucyclogobius newberryi* (E)
- winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- winter-run chinook salmon crit. habitat, *Oncorhynchus tshawytscha* (E)

Proposed Species

Reptiles
- Alameda whip snake, *Masticophis lateralis euryxanthus* (PE)

Amphibians
- California red-legged frog, *Rana aurora draytoni* (PE)
- Coho salmon, *Oncorhynchus kisutch* (PT)
- Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Candidate Species

Mammals
- Berkeley kangaroo rat, *Dipodomys heermanni berkleyensis* (2)
- great western mastiff bat, *Eumops peroti californicus* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (2)
- Pacific western big-eared bat, *Plecotus townsendii townsendii* (2)
- Alameda island mole, *Scapanus latimanus parvus* (2)
- salt marsh vagrant shrew, *Sorex vagrans halicoetes* (2)

Birds
- tricolor blackbird, *Agelaius tricolor* (2)
- Bell's sage sparrow, *Amphispiza belli belli* (2)
- ferruginous hawk, *Buteo regalis* (2)
- little willow flycatcher, *Empidonax traillii brewsteri* (2)
- saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (2)
- black rail, *Lateralis Jamiciscens* (2)
- Alameda (South Bay) song sparrow, *Melospiza melodia maxillaris* (2)

Reptiles
- northwestern pond turtle, *Clinmys marmorata marmorata* (2)
- southwestern pond turtle, *Clinmys marmorata palida* (2)
- California horned lizard, *Phrynosoma coronatum frontale* (2)
QUAD: 468D  OAKLAND WEST

Candidate Species

Amphibians
California tiger salamander, *Ambystoma californiense* (1)
foothill yellow-legged frog, *Rana boylii* (2)

Fish
longfin smelt, *Spirinchus thaleicthys* (2)

Invertebrates
Bridges' Coast Range shoulderband snail, *Helminthoglypta nickliniana bridgesii* (2)
Ricksecker's water scavenger beetle, *Hydrochera rickseckeri* (2)
San Francisco lacewing, *Nothochrysa californica* (2)

Plants
Santa Cruz tarweed, *Holocarpha maoradenia* (1)
San Francisco Bay spinachflower, *Chorizanthe cuspidata var. cuspidata* (2)
northcoast bird's-beak, *Cordylanthus maritimus* ssp. *palustris* (2)
Kellogg's (wedged-leaved) horkelia, *Horkelia cuneata* ssp. *sericea* (2)
adobe sanicle, *Sanicula maritima* (2)
alkali milk-vetch, *Astragalus tener var. tener* (2R)

QUAD: 0208  LITTLE MUD FLAT

Listed Species

Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species

Mammals
pygmy rabbit, *Brachylagus idahoensis* (2)
spotted bat, *Euderma maculatum* (2)
small-footed myotis bat, *Myotis ciliolabrum* (2)
long-eared myotis bat, *Myotis evotis* (2)
fringed myotis bat, *Myotis thysanodes* (2)
long-legged myotis bat, *Myotis volans* (2)
Yuma myotis bat, *Myotis yumanensis* (2)
Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
tricolored blackbird, *Agelaius tricolor* (2)
ferruginous hawk, *Buteo regalis* (2)

Reptiles
Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)
QUAD: 620C WENDEL

Listed Species

Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species

Mammals
pygmy rabbit, *Brachylagus idahoensis* (2)
spotted bat, *Euderma maculatum* (2)
small-footed myotis bat, *Myotis ciliolabrum* (2)
long-eared myotis bat, *Myotis evotis* (2)
fringed myotis bat, *Myotis thysanodes* (2)
long-legged myotis bat, *Myotis volans* (2)
Yuma myotis bat, *Myotis yumanensis* (2)
Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
tricolored blackbird, *Agelaius tricolor* (2)
ferruginous hawk, *Buteo regalis* (2)
white-faced ibis, *Plegadis chihi* (2)

Reptiles
Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

QUAD: 621A SHAFFER MTN.

Listed Species

Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species

Mammals
pygmy rabbit, *Brachylagus idahoensis* (2)
spotted bat, *Euderma maculatum* (2)
small-footed myotis bat, *Myotis ciliolabrum* (2)
long-eared myotis bat, *Myotis evotis* (2)
fringed myotis bat, *Myotis thysanodes* (2)
long-legged myotis bat, *Myotis volans* (2)
Yuma myotis bat, *Myotis yumanensis* (2)
Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)
ENCLOSURE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS
Reference File No. 1-1-96-TA-25
October 12, 1995

QUAD: 621A SHAFFER MTN.

Candidate Species

Birds
- tricolored blackbird, *Agelaius tricolor* (2)
- western burrowing owl, *Athena cunicularia hypugea* (2)
- ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

QUAD: 639A SNOWSTORM MTN.

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species

Mammals
- pygmy rabbit, *Brachylagus idahoensis* (2)
- spotted bat, *Euderma maculatum* (2)
- small-footed myotis bat, *Myotis ciliolabrum* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend’s big-eared bat, *Plecotus townsendi palessens* (2)

Birds
- western burrowing owl, *Athena cunicularia hypugea* (2)
- ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

QUAD: 639B WEST OF SNOWSTORM MTN.

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)
ENCLOSURE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS

Reference File No. 1-1-96-TA-25
October 12, 1995

QUAD: 639B WEST OF SNOWSTORM MTN.

Candidate Species

Mammals
- pygmy rabbit, *Brachylagus idahoensis* (2)
- spotted bat, *Euderma maculatum* (2)
- small-footed myotis bat, *Myotis ciliolabrum* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
- western burrowing owl, *Athene cunicularia hypogeia* (2)
- ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

QUAD: 639C PETES VALLEY

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species

Mammals
- pygmy rabbit, *Brachylagus idahoensis* (2)
- spotted bat, *Euderma maculatum* (2)
- small-footed myotis bat, *Myotis ciliolabrum* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
- western burrowing owl, *Athene cunicularia hypogeia* (2)
- ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)
Listed and Proposed Endangered and Threatened Species and Candidate Species That May Occur in or Be Affected by Projects in the Area of the Following Selected Quads

Reference File No. 1-1-96-TA-25
October 12, 1995

QUAD: 639D KARLO

**Listed Species**

**Birds**
- American peregrine falcon, *Falco peregrinus anatum* (E)
- Bald eagle, *Haliaeetus leucocephalus* (T)

**Candidate Species**

**Mammals**
- Pygmy rabbit, *Brachylagus idahoensis* (2)
- Spotted bat, *Euderma maculatum* (2)
- Small-footed myotis bat, *Myotis ciliolabrum* (2)
- Long-eared myotis bat, *Myotis evotis* (2)
- Fringed myotis bat, *Myotis thysanodes* (2)
- Long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendi pallascens* (2)

**Birds**
- Western burrowing owl, *Athene cunicularia hypugea* (2)
- Ferruginous hawk, *Buteo regalis* (2)

**Reptiles**
- Northern sagebrush lizard, *Scoloporus graciosus graciosus* (2)

QUAD: 657B MCDONALD PEAK

**Listed Species**

**Birds**
- American peregrine falcon, *Falco peregrinus anatum* (E)
- Bald eagle, *Haliaeetus leucocephalus* (T)

**Candidate Species**

**Mammals**
- Pygmy rabbit, *Brachylagus idahoensis* (2)
- Spotted bat, *Euderma maculatum* (2)
- Small-footed myotis bat, *Myotis ciliolabrum* (2)
- Long-eared myotis bat, *Myotis evotis* (2)
- Fringed myotis bat, *Myotis thysanodes* (2)
- Long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendi pallascens* (2)

**Birds**
- Ferruginous hawk, *Buteo regalis* (2)
LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS
Reference File No. 1-1-96-TA-25
October 12, 1995

QUAD: 657B  MCDONALD PEAK

Candidate Species
Reptiles
Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)
Fish
Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)

QUAD: 657C  TERMO

Listed Species
Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)

Candidate Species
Mammals
pygmy rabbit, *Brachylagus idahoensis* (2)
spotted bat, *Euderma maculatum* (2)
small-footed myotis bat, *Myotis ciliolabrum* (2)
long-eared myotis bat, *Myotis evotis* (2)
fringed myotis bat, *Myotis thysanodes* (2)
long-legged myotis bat, *Myotis volans* (2)
Yuma myotis bat, *Myotis yumanensis* (2)
Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
western burrowing owl, *Athene cunicularia hypugea* (2)
ferruginous hawk, *Buteo regalis* (2)

Reptiles
Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

Fish
Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)

QUAD: 657D  RAVENDALE

Listed Species
Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)
QUAD: 657D RAVENDEALE

Candidate Species

Mammals
- pygmy rabbit, *Brachylagus idahoensis* (2)
- spotted bat, *Euderma maculatum* (2)
- small-footed myotis bat, *Myotis ciliolabrum* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendii pallescens* (2)

Birds
- western burrowing owl, *Athene cunicularia hypugaea* (2)
- ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

Fish
- Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss* ssp. (2)

QUAD: 658A ANDERSON MTN.

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)

Fish
- Delta smelt, *Hypomesus transpacificus* (T)

Candidate Species

Mammals
- pygmy rabbit, *Brachylagus idahoensis* (2)
- spotted bat, *Euderma maculatum* (2)
- Pacific fisher, *Martes pennanti pacifica* (2)
- small-footed myotis bat, *Myotis ciliolabrum* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- Pale Townsend's big-eared bat, *Plecotus townsendii pallescens* (2)

Birds
- ferruginous hawk, *Buteo regalis* (2)
QUAD: 658A  ANDERSON MTN.

Candidate Species

Fish
- Pit Roach, *Lavinia symmetricus mitrulus* (2)
- Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)

QUAD: 674B  TULE MOUNTAIN

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- Bald eagle, *Haliaeetus leucocephalus* (T)

Fish
- Delta smelt, *Hypomesus transpacificus* (T)

Candidate Species

Mammals
- Pygmy rabbit, *Brachylagus idahoensis* (2)
- Spotted bat, *Euderma maculatum* (2)
- Small-footed myotis bat, *Myotis ciliolabrum* (2)
- Long-eared myotis bat, *Myotis evotis* (2)
- Fringed myotis bat, *Myotis thysanodes* (2)
- Long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)
- California bighorn sheep, *Ovis canadensis californiana* (2)
- Paleo Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
- Ferruginous hawk, *Buteo regalis* (2)

Reptiles
- Northern sagebrush lizard, *Sceloporus gracious graciosus* (2)

Fish
- Pit Roach, *Lavinia symmetricus mitrulus* (2)
- Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)

QUAD: 674C  MADELINE

Listed Species

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- Bald eagle, *Haliaeetus leucocephalus* (T)
ENCLOSURE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS

Reference File No. 1-1-86-TA-25
October 12, 1985

QUAD: 674C MADELINE

Listed Species

Fish
Delta smelt, Hypomesus transpacificus (T)

Candidate Species

Mammals
pygmy rabbit, Brachylagus idahoensis (2)
spotted bat, Euderma maculatum (2)
small-footed myotis bat, Myotis ciliolabrum (2)
long-eared myotis bat, Myotis evotis (2)
fringed myotis bat, Myotis thysanodes (2)
long-legged myotis bat, Myotis volans (2)
Yuma myotis bat, Myotis yumanensis (2)
California bighorn sheep, Ovis canadensis californiana (2)
Pale Townsend's big-eared bat, Plecotus townsendi pallescens (2)

Birds
ferruginous hawk, Buteo regalis (2)

Reptiles
Northern sagebrush lizard, Sceloporus graciosus graciosus (2)

Fish
Pit Roach, Lavinia symmetricus mitrulus (2)
Goose Lake redband trout, Oncorhynchus (=Salmo) mykiss ssp. (2)

QUAD: 675A LIKELY

Listed Species

Birds
American peregrine falcon, Falco peregrinus anatum (E)
bald eagle, Haliaeetus leucocephalus (T)

Fish
Delta smelt, Hypomesus transpacificus (T)

Candidate Species

Mammals
pygmy rabbit, Brachylagus idahoensis (2)
spotted bat, Euderma maculatum (2)
small-footed myotis bat, Myotis ciliolabrum (2)
long-eared myotis bat, Myotis evotis (2)
fringed myotis bat, Myotis thysanodes (2)
long-legged myotis bat, Myotis volans (2)
QUAD: 675A  LIKELY

Candidate Species

Mammals
Yuma myotis bat.  *Myotis yumanensis* (2)
Pale Townsend’s big-eared bat,  *Plecotus townsendi pallescens* (2)

Birds
ferruginous hawk.  *Buteo regalis* (2)

Reptiles
Northern sagebrush lizard,  *Sceloporus graciosus graciosus* (2)

Fish
Pit Roach.  *Lavinia symetricus mitrulus* (2)
Goose Lake redband trout,  *Oncorhynchus (=Salmo) mykiss ssp.* (2)

Plants
Ash Creek ivesia,  *Ivesia paniculata* (2)

QUAD: 682A  ALTURAS

Listed Species

Birds
American peregrine falcon.  *Falco peregrinus anatum* (E)
bald eagle.  *Haliaeetus leucocephalus* (T)

Fish
Delta smelt.  *Hypomesus transpacificus* (T)

Candidate Species

Mammals
pygmy rabbit,  *Brachylagus idahoensis* (2)
spotted bat,  *Euderma maculatum* (2)
small-footed myotis bat,  *Myotis ciliolabrum* (2)
long-eared myotis bat,  *Myotis evotis* (2)
fringed myotis bat,  *Myotis thysanodes* (2)
long-legged myotis bat,  *Myotis volans* (2)
Yuma myotis bat,  *Myotis yumanensis* (2)
Pale Townsend’s big-eared bat,  *Plecotus townsendi pallescens* (2)

Birds
ferruginous hawk.  *Buteo regalis* (2)

Reptiles
Northern sagebrush lizard.  *Sceloporus graciosus graciosus* (2)

Amphibians
spotted frog.  *Rana pretiosa* (2)

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ENVELOPE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS
Reference File No. 1-1-98-TA-25
October 12, 1995

QUAD: 692A ALTURAS

Candidate Species
Fish
Pit Roach, *Lavinia symmetricus mitrulus* (2)
Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)

Plants
prostrate buckwheat, *Eriogonum prodd-jum* (2)

QUAD: 682D BAYLEY

Listed Species
Birds
American peregrine falcon, *Falco peregrinus anatum* (E)
bald eagle, *Haliaeetus leucocephalus* (T)

Fish
Delta smelt, *Hypomesus transpaci1h:us* (T)

Candidate Species
Mammals
pygmy rabbit, *Brachylagus idahoensis* (2)
spotted bat, *Euderma maculatum* (2)
small-footed myotis bat, *Myotis ciliolabrum* (2)
long-eared myotis bat, *Myotis evotis* (2)
fringed myotis bat, *Myotis thysanodes* (2)
long-legged myotis bat, *Myotis volans* (2)
Yuma myotis bat, *Myotis yumanensis* (2)
Pale Townsend's big-eared bat, *Plecotus townsendi pallescens* (2)

Birds
ferruginous hawk, *Buteo regalis* (2)

Reptiles
Northern sagebrush lizard, *Sceloporus graciosus graciosus* (2)

Amphibians
spotted frog, *Rana pretiosa* (2)

Fish
Pit Roach, *Lavinia symmetricus mitrulus* (2)
Goose Lake redband trout, *Oncorhynchus (=Salmo) mykiss ssp.* (2)
ENCLOSURE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR IN OR BE AFFECTED BY PROJECTS IN THE AREA OF THE FOLLOWING SELECTED QUADS

Reference File No. 1-1-95-TA-25
October 12, 1995

Notes:

(E) Endangered    (T) Threatened    (P) Proposed    (CH) Critical Habitat

(1) Category 1: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

(2) Category 2: Taxa for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

(1R) Recommended for Category 1 status.

(2R) Recommended for Category 2 status.

( ) Listing petitioned.

( * ) Possibly extinct.
Marion County
Federal
Endangered and Threatened Species List

Species

INDIANA BAT (E) MYOTIS SODALIS

E = Endangered,  T = Threatened

The above list of Federal endangered and threatened species was updated May 1992. It does not include state listed endangered and threatened species. For state listings contact the Illinois Division of Natural Heritage, Endangered Species Protection Board.

Attached are fact sheets for each species listed above.
The following list of State endangered and threatened species was provided by the Illinois Department of Conservation Division of Natural Heritage and the Illinois Endangered Species Protection Board, November, 1991. Since this information changes frequently an updated list for specific projects should be obtained from the Board. State Listing column: LT = Threatened listing, LE = Endangered listing.

<table>
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<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
<th>STATE LISTING</th>
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<td>SHORT-EARED OWL</td>
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<td>BARTRAMIA LONGICAUDA</td>
<td>UPLAND SANDPIPER</td>
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<tr>
<td>CIRCUS CYANEUS</td>
<td>NORTHERN HARRIER</td>
<td>LE</td>
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<td>GREATER PRAIRIE-CHICKEN</td>
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<td>VILLOSA LIIENOSA</td>
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<td>UNIOMERUS TETRALASMUS</td>
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<td>ACCIPITER COOPERII</td>
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<td>LANIUS LUDOVICIANUS</td>
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<tr>
<td>TRIFOLIUM REFLEXUM</td>
<td>BUFFALO CLOVER</td>
<td>LE</td>
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</tbody>
</table>
INDIANA BAT

Myotis sodalis (Miller and Allen)

Order: Chiroptera
Family: Vespertilionidae

Description: A medium-size myotis, closely resembling the little brown bat (Myotis lucifugus) but differing in coloration, the fur being a dull grayish chestnut rather than bronze, with the basal portion of the hairs of the back dull lead colored; coloration of underparts pinkish to cinnamon, hind feet smaller and more delicate than in M. lucifugus; calcar strongly keeled.

Distribution: Midwest and eastern United States from the western edge of Ozark region in Oklahoma to central Vermont; to southern Wisconsin, and as far south as northern Florida. Distribution is associated with major cavernous limestone areas and areas just north of cave regions. (Hall, 1962).

Former Distribution: Probably about the same, although there is evidence that many caves within the range of the species have been abandoned since 1950.


Estimated numbers: About 500,000.

Breeding rate in the wild: Usually a single young in late June.

Reasons for decline: Commercialization of caves in which Indiana bats roost. Wanton destruction of large numbers of Indiana bats by vandals. (John S. Hall reported in personal communication, 1965, that a few years ago two boys killed about 10,000 Myotis sodalis in Carter Cave, Kentucky, in just a few minutes.) Roosts being disturbed by increasing numbers of spelunkers and others seeking recreation. Disturbances during bat banding programs. Colonies frequently raided for laboratory experimental animals. Insecticide poisoning may possibly be new threat. The species has a fairly restricted geographic range and shows a high degree of aggregation in the winter, when over 90 per cent of the estimated population occurs in only four caves. This high degree of aggregation makes the species very vulnerable.

Protective measures already taken: American Society of Mammalogists appointed a committee in the fall of 1963 to investigate the problem of reduction in bat populations; resolution approved by American Society of Mammalogists on June 17, 1964, that removal of bats from caves be discouraged except for scientific research and that molestation of bats in roosts or other unnecessary disturbance be discontinued. Construction of a gate across entrance to Carter Cave, Kentucky, where over 100,000 Indiana bats roost. SCS-IL, August, 1992
**Accipiter cooperii** (Boraparte)

**COOPER'S HAWK**

**ACCIPITRIDAE**

**Status:** Endangered in Illinois

**Present Distribution:** One of the 3 North American accipiters, the Cooper's hawk breeds from British Columbia, central Saskatchewan and Nova Scotia south to Baja California, Northern Mexico and the southeastern U.S. Wintering birds occur north to southern New England and British Columbia. In Illinois this species is a rare summer resident and an uncommon migrant and winter resident (Bohlen 1989).

**Former Illinois Distribution:** This woodland raptor was formerly considered to be relatively common throughout all the wooded portions of the state (Redway, 1889).

**Habitat:** The Cooper's hawk prefers mature deciduous forests but also occurs in open woodland and forest edge. The nest consists of a bulky platform of sticks and twigs usually placed near the trunk in a tree.

**Reason for Status:** Continental populations of the Cooper's hawk have recently stabilized following a severe decline during the 1970s, probably due to the banning of DDT (Ehrlich et al. 1988). However, the Illinois breeding population is still very low with recent nesting known from only 21 Illinois counties.

**Management Recommendations:** The preservation of large forest trees for nest sites and the protection of known nesting areas from human disturbance would be the most beneficial management for this species in Illinois.

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**Asio flammeus** (Pontoppidan)

**SHORT-EARED OWL**

**STRIGIDAE**

**Status:** Endangered in Illinois

**Present Distribution:** In North America, short-eared owls breed locally from Alaska and northern Canada south to New Jersey and California. They winter from the southern part of their breeding range to as far south as Guatemala. This owl is a rare summer resident and an uncommon migrant and winter resident throughout the state (Bohlen 1989). In 1990 this species nested at 5 locations in Jasper, Lee, Marion and McLean counties, the first documented nesting in the state since 1973.

**Former Illinois Distribution:** Cory (1909) believed this owl nested in Cook County, and Ford (1956) emphasized an erratic nesting behavior in Illinois. Anadric nesting probably formerly occurred across the northern half of Illinois wherever appropriate habitat was available. Wintering birds have apparently always been locally common in Illinois.

**Habitat:** The short-eared owl nests on the ground in open country including prairies, meadows, marshes, savannas and dunes. In Illinois the short-eared owl may prefer wet prairie habitats (Birkenholz 1975). However, recent nesting also has occurred in agricultural set-aside land. Nearly all of the recent nest records for Illinois are from grassland areas of at least 50 ha in size.

**Reason for Status:** Destruction of grassland and wetland habitat have probably been the primary factors creating the precarious status of this owl as a breeding species in Illinois. The extremely low breeding population and erratic nesting behavior make the short-eared owls' continued presence unpredictable even in known nesting areas.

**Management Recommendations:** Since most recent nesting of this species in Illinois is from large grassland areas, the preservation of large blocks of prairie and marsh habitat appear essential. Further research may show that specific management techniques, such as prescribed burning, influence nesting behavior.
**Bartramia longicauda** (Bechstein)

**UPLAND SANDPIPER**

**SCOLOPACIDAE**

**Status: Endangered in Illinois**

Present Distribution: This grassland species breeds from Alaska and central Canada to the central U.S., and winters in southern South America. It occurs as an uncommon summer resident and migrant throughout Illinois (Bechler 1980).

Former Illinois Distribution: The upland sandpiper was once a very common summer resident throughout Illinois (Nelson 1876b, Ridgway 1855, Ford 1936). However, it was hunted nearly to extinction before it was given protection (Ridgway 1915).

Habitat: In Illinois, the upland sandpiper usually inhabits prairies, pastureland and hayfields with an average grass height less than 30 cm (Grabber and Graber 1963, Buhnerkempke and Westemeier 1988). However, late spring burns and drought may allow this species to utilize areas of normally taller grasses. Grasslands adjacent to airports also are sometimes utilized by this species in Illinois (Becker 1980).

Reason for Status: The upland sandpiper has shown some signs of a weak recovery but is still scarce when compared to early records. The continued loss and fragmentation of grassland habitat (pasture, hayfields, and upland prairie) continues to threaten this species' survival in Illinois.

Management Recommendations: Preservation and proper management of large grassland areas are critical for this species. Prescribed burning or mowing is essential in order to provide suitable nesting areas. A reduction in disturbance levels in pastures and hayfields also would benefit this species.
**Circus cyaneus Linnaeus**

**NORTHERN HARRIER**

**ACCIPITRIDAE**

Status: Endangered in Illinois

Present Distribution: The northern harrier nests from Alaska, the Mackenzie District, and Newfoundland south to Virginia and northern Mexico and winters south from British Columbia, Wisconsin, and New Brunswick. It is an occasional summer resident and a common migrant and winter resident in open country throughout Illinois (Bohlten 1989).

Former Illinois Distribution: Ridgway (1889) described the northern harrier as a species of very extensive distribution in Illinois, but also noted that very little was known about its habits.

Habitat: In Illinois, harriers are most often observed during migration as they hunt over pastures and fallow fields. Nesting is usually restricted to relatively large undisturbed grasslands and marshes. Most harrier nests in Illinois occur in grasslands at least 60 ha in size and include a variety of cover types such as prairie grasses, brome, timothy, and fallow fields and even wheat fields. The nest is usually placed on the ground in a mound of dead reeds or grasses (Bull and Farrand 1977).

Reason for Status: As a breeding bird, this species is rare in Illinois. Destruction of marsh and prairie nest habitat probably led to the decline of its once wide distribution. The population decline, present status, and habitat of this species parallel those of the short-eared owl.

Management Recommendations: Preservation of large blocks of prairie and marsh habitat are essential for this species. Further research into nesting behavior as it relates to prairie management also would be beneficial in protecting this species.

**Lanius ludovicianus Linnaeus**

**LOGGERHEAD SHRIKE**

**Laniidae**

Status: Threatened in Illinois

Present Distribution: The loggerhead shrike breeds from southern Canada south to southern Florida, the Gulf Coast, and southern Mexico. Wintering birds occur north to Virginia, the Midwest, and northern California. The loggerhead shrike is a common resident in the southern third of Illinois and an uncommon migrant and summer resident elsewhere in the state.

Former Illinois Distribution: Prior to 1900 the shrike was distributed statewide, adapting to osage orange hedgerows for nesting and feeding. With the elimination of the hedgerows, the central and northern Illinois populations declined steadily and were almost entirely eliminated by 1972 (Graber et al. 1973).

Habitat: In the Midwest, loggerhead shrikes inhabit open, agricultural areas interspersed with grassland habitat (Brooks and Temple 1990a). Most of the nesting found in Illinois are in osage orange, honey locust, red cedar and cypress.

Reason for Status: Shrike populations in Illinois declined dramatically between the 1950s and the early 1970s (Graber et al. 1973). Shrikes remain relatively uncommon in Illinois but the population is apparently stable and possibly even currently increasing in some parts of the state.

Management Recommendations: The primary management needs of the loggerhead shrike in Illinois are the preservation of hedgerows and other thorny species, interspersed with large, open grassland areas. Brooks and Temple (1990b), however, suggest that recent shrike declines in the upper Midwest may be due to low overwinter survival caused by factors outside their breeding range.
Unio merus tetr a lasc mus (Say)

PONDHORN

UNIONIDAE

Status: Threatened in Illinois.

Present Distribution: The pondhorn occurs in the Mississippi River drainage from Iowa, Illinois, and Indiana, south to Louisiana, east to Tennessee and west to Colorado, Oklahoma and Texas (Parmalee 1967). In Illinois, this mussel is sporadic and locally common in small creeks and sloughs in the southern three fourths of the state.

Former Illinois Distribution: The pondhorn was formerly widely distributed in Illinois, occurring throughout much of the state except for the northeastern quarter (Parmalee 1967). Despite its wide geographic range, it was also considered to be uncommon in Illinois and only locally numerous (Parmalee 1967).

Habitat: The pondhorn inhabits ponds, sloughs, lakes, and quiet rivers, where it is usually found in areas with a mud substrate and shallow water (Parmalee 1967).

Reason for Status: The primary threats to this species in Illinois are declining water quality and habitat degradation as a result of agricultural runoff and industrial and municipal pollution.

Management Recommendations: This species would benefit from better soil conservation measures designed to reduce agricultural runoff and pollution. Improved protection from industrial and domestic pollution would also benefit this species.
**Villosa lienosa** (Conrad)

**LITTLE SPECTACLECASE**

**UNIONIDAE**

Status: Endangered in Illinois

Present Distribution: The little spectaclecase is known from the Ohio and Wabash drainages. In Illinois, it is presently restricted to the Wabash River drainage where it occurs in the Embarras, Little Vermilion, and Vermilion rivers.

Former Illinois Distribution: The little spectaclecase historically occurred in the Vermilion, Embarras and Little Wabash rivers (K.S. Cummings unpublished data), but now is very sporadic in occurrence in southern and eastern Illinois.

Habitat: This species inhabits streams and small rivers, and is usually found in shallow water on a sand/mud bottom (Parmalee 1967).

Reason for Status: Increased siltation, domestic, industrial, and agricultural pollution, and competition from exotic mussel species are all potential threats to this species in Illinois.

Management Recommendations: This species would benefit from better soil conservation measures designed to reduce agricultural runoff and pollution. Improved protection from industrial and municipal pollution would also benefit this species.

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**Tympanuchus cupido** (Linnaeus)

**GREATER PRAIRIE-CHICKEN**

**PHASIANIDAE**

Status: Endangered in Illinois

Present Distribution: The greater prairie-chicken occurs locally from Manitoba south through the Great Plains to Oklahoma, and on the coastal prairies of Texas. This species is a very rare and local permanent resident in south-central Illinois, with remnant flocks of fewer than 40 birds each in Jasper and Marion counties, and a few individuals in Clay County.

Former Illinois Distribution: The prairie-chicken once was abundant in the prairie regions throughout the northern two-thirds of Illinois. The initial opening of the prairie and forests to agriculture in Illinois benefited the greater prairie-chicken and the population reached an estimated peak of approximately 10 million birds by 1860 (Westemeier and Edwards 1987). Prairie-chicken numbers began to decline shortly after reaching their peak abundance, however, and soon after 1900 they were considered to be on the brink of extinction in Illinois (Ridgway 1915).

Habitat: In Illinois, prairie-chickens no longer inhabit native prairie habitats but occur on intensely managed preserves. Through the use of reseeding and prescribed burning, optimum nesting habitat of second-, third-, and fourth-year grass growth is maintained. Native grasses are being reintroduced into sanctuaries and managed with a prescribed burning program. Well-drained, open booming grounds also are crucial for the breeding activity of this species.

Reason for Status: Under tremendous pressure from hunting, egg collecting and habitat loss, the Illinois population of this once abundant species has declined to but a meager representation of its former abundance. If it were not for the intensive efforts of the Illinois Natural History Survey, The Nature Conservancy, and the Illinois Department of Conservation this species would certainly have been extirpated from Illinois.

Booming ground harassment and nest parasitism by pheasants and predation pose additional threats to the species' already precarious status in the state.

Management Recommendations: Illinois populations of the greater prairie-chicken are managed by the Illinois Natural History Survey and the Illinois Department of Conservation. Land acquisition and management through sharecrop; i.e., seeding of required grass species, and prescribed burning are primary management tools (Westemeier 1972).
**Tradescantia bracteata** Small

**COMMELINACEAE**

**PRAIRIE SPIDERWORT**

Status: Endangered in Illinois.
Habit: Rhizomatous perennial herb, 5 to 45 cm high.
Range: North-central United States, near its eastern range limit in Illinois.

**Trientalis borealis** Raf.

**PRIMULACEAE**

**STAR-FLOWER**

Status: Threatened in Illinois.
Habit: Rhizomatous perennial herb, stem 10-20 cm high.
Range: Boreal eastern and central Canada, south into northwestern United States.

**Triadenum virginicum** (L.) Raf.

**CLUSIACEAE**

**MARCH ST. JOHN'S WORT**

Status: Endangered in Illinois.
Synonym: *Hypericum virginicum* L.
Habit: Erect perennial herb, 30-60 cm high.
Range: Eastern United States and adjacent Canada.

**Trifolium reflexum** L.

**FABACEAE**

**BUFFALO CLOVER**

Status: Endangered in Illinois.
Habit: Annual or biennial herb, stems branched, 20-50 cm high.
Range: Eastern and central United States and adjacent Canada.

**Tradescantia bracteata** occurs in dry-mesic silt and sand prairies in western Illinois, often in disturbed habitats. Presently it is known from seven localities in Illinois. None of the populations are protected, although several are along railroad and highway rights-of-way. The report of this species from Winnebago County is based on a cultivated plant.


**Trientalis borealis** reaches the southern margin of its range in northern Illinois, where it occurs in bog, mesic sand forests, and along Lake Michigan ravine bluffs. Presently five Illinois populations are known to be extant, including three in state nature preserves.


In Illinois, *Triadenum virginicum* is known only from peaty sand prairies bordering Lake Michigan, where it was collected in 1972 from a Lake County state park. Although it has not been relocated at this site, extensive habitat remains, and it is likely the species remains extant in Illinois.


A plant of dry-mesic savannas, flatwoods, and prairies, *Trifolium reflexum* has been nearly extirpated from Illinois. This species appears to be disturbance-adapted and has been found to occur in sites that are burned or regularly affected by minor disturbances such as mowing, flooding, or erosion. Presently, four populations are known in Illinois, including an Adams County state park and a privately protected flatwoods area in Washington County. A 1947 Cook County collection site no longer has an extant population. In 1981 it was reported from Fayette County, but the status of this station is unknown.

Rumex hastatus Balcw.

**SOUR DOCK**

**POLYGONACEAE**

Status: Endangered in Illinois.
Habit: Annual herb, stems 0.15-1.3 m high.
Range: Eastern United States.

*Rumex hastatus* reaches its northern range limit in a small area of southwestern Illinois, where it has been reported from sandy areas, barrens, and hill prairies. The only modern collection from Illinois is a 1960 specimen from a sandy area near the Mississippi River in St. Clair County. The species may still occur in Illinois in this collection area.


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Sabatia campestris Nutt.

**PRAIRIE ROSE GENTIAN**

**GENTIANACEAE**

Status: Endangered in Illinois.
Habit: Branching annual herb, 20-40 cm high.
Range: South-central United States.

A plant of mesic prairies, *Sabatia campestris* reaches its eastern and northern range limit in Illinois. This species was formerly more common in Illinois, but has been almost eliminated by the destruction of its habitat. Until recently, a Bond County station contained the only known extant Illinois population of this species. Between 1982-1983, eight more stations were found or rediscovered in Effingham, Fayette, and Marion counties. This annual species is erratic in appearance, however, and only two stations have been successfully relocated during recent searches.

References: Jones (1947), Wilbur (1955).

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Sagittaria longirostra (Micheli) J. G. Sm.

**ARROWHEAD**

**ALISMATACEAE**

Status: Endangered in Illinois.
Synonymy: *Sagittaria engelmanniana* J. G. Sm. subsp. *longirostra* (Micheli) Bogin; *Sagittaria australis* (J. G. Sm.) Small
Habit: Stoloniferous perennial herb, 30-90 cm high.
Range: Southeastern United States, extending north to southern Illinois.

*Sagittaria longirostra* reaches its northwestern range limit in wooded steeps in extreme southern Illinois. It was first discovered in the state in 1967 and is now known from two stations, both in the Cretaceous Hills Section of the Coastal Plain Natural Division. These populations are within the Shawnee National Forest.

October 12, 1995

Ms. Julie Donsky, Environmental Scientist
Dames & Moore
One Continental Towers
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

RE: Endangered and Threatened Species Consultation Process
Environmental Report - ICC Submittal
Union Pacific and Southern Pacific Railroads Merger
IDNR Project: #21189

Dear Ms. Donsky:

Thank you for sending the above referenced project to this office for review of the presence of endangered or threatened species, Illinois Nature Preserves, and/or Illinois Natural Area Inventory (INAI) sites. The Illinois Natural Heritage Database was examined and there are several known occurrences associated with portions of this railroad project.

I. DeCamp to Edwardsville - Edwardsville to Madison:

The first area of concern is classified as the Eagle Park Marsh INAI site. This Illinois listed natural area inventory site is depicted on the Granite City, Illinois quadrangle map and exists in portions of the following topographic map sections - T:3N, R:9W, S:31, also T:3N, R:10W, S:36 and last, T:2N, R:10W, S:1, immediately south/southeast of the town of Venice, Illinois in Madison County. Additionally, the Eagle Park Marsh INAI site is part of the Horseshoe Lake complex located approximately 500 to 1000 feet east of the railroad tracks under investigation. State listed avian species recorded within this INAI site include: yellow-headed blackbird (Xanthocephalus xanthocephalus), which is classified as State endangered; common moorhen (Gallinula chloropus), which is classified as State threatened; and the pied-billed grebe (Podilymbus podiceps), which is also classified as State threatened.

The second natural resource of concern is a confirmed record of the State listed threatened avian species commonly known as the common moorhen (Gallinula chloropus) within topographic map Section 11, Township 3 north, Range 9 west, immediately southwest of the town of Stallings, Illinois in Madison County. This occurrence is depicted on the Monks Mound quadrangle map and is located approximately 1000 feet south of the railroad tracks in question.
II. Barr to Girard:

The only recorded natural resource of concern currently within the Division's files is a confirmed record of the State listed threatened avian species commonly known as the loggerhead shrike (Lanius ludovicianus) within topographic map Sections 33 and 34, Townships 14 north and 15 north, Range 6 west, immediately north of Lick Creek in Sangamon County, Illinois. This occurrence is depicted on the Loami quadrangle map and is located approximately 1 mile west of the subject railroad tracks.

Because this is an information request, further consultation is not required at this time. However, as authorized by Section 11(a) of the Illinois Endangered Species Protection Act (Ill. Rev. Stat. 1989, ch. 8, par. 341), a proposed land-altering action shall not commence until the completion of the consultation process. This includes any form of construction, land management, or other activity authorized, funded, or performed by a State agency or local unit of government that will result in a change to the existing environmental conditions and/or may have a direct or indirect adverse impact on a listed species or its essential habitat or that otherwise jeopardizes the survival of that species. It is hoped that the environmental information contained in this letter will be used by the appropriate parties during any subsequent planning and construction phases. If construction efforts will be occurring in the specific regions described in this correspondence, it will be necessary to continue the consultation process so that an accurate assessment of potential biological impacts to the listed resources present can be made.

Please be aware that the Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of significant natural features in any part of Illinois. The reports only summarize the existing information regarding the natural features or locations in question known to the Division of Natural Heritage at the time of the request. The reports should never be regarded as final statements on the subject site being considered, nor should they be a substitute for field surveys required for environmental assessments.

If you have any questions or concerns about the above information, please do not hesitate to contact me at (217) 785-5500. Thank you for your assistance in this matter.

Sincerely,

Joseph A. Kath
Project Manager
Endangered and Threatened Species Protection Program
Ms. Julie Donsky  
Environmental Scientist  
Dames and Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

This response to your letter of September 22, 1995, requesting information for an Environmental Report pertaining to the proposed merger of Union Pacific and Southern Pacific Railroads. At this time your request concerns abandonments within Menard, Sangamon, Macoupin, and Madison Counties of Illinois.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. Therefore, we are furnishing you the following list of species which may be present in the concerned area:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Common Name (Scientific Name)</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menard County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endangered</td>
<td>Indiana Bat <em>Myotis sodalis</em></td>
<td>Caves, mines; small stream corridors with well developed riparian woods; upland forests</td>
</tr>
<tr>
<td>Threatened</td>
<td>Eastern prairie fringed orchid <em>Platanthera leucophaea</em></td>
<td>Mesic to wet prairies</td>
</tr>
<tr>
<td>Threatened</td>
<td>Bald eagle <em>Haliaeetus leucocephalus</em></td>
<td>Wintering</td>
</tr>
</tbody>
</table>
Ms. Julie Donsky

<table>
<thead>
<tr>
<th>Classification</th>
<th>Common Name (Scientific Name)</th>
<th>Habitat</th>
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<tbody>
<tr>
<td>Macoupin County</td>
<td><strong>Endangered</strong> Indiana Bat <em>Myotis sodalis</em></td>
<td>Caves, mines; small stream corridors with well developed riparian woods; upland forests</td>
</tr>
<tr>
<td></td>
<td><strong>Threatened</strong> Eastern prairie fringed orchid <em>Platanthera leucophaea</em></td>
<td>Mesic to wet prairies</td>
</tr>
</tbody>
</table>

| Sangamon County | **Endangered** Indiana Bat *Myotis sodalis* | Caves, mines; small stream corridors with well developed riparian woods; upland forests |
|                | **Threatened** Bald eagle *Haliaeetus leucocephalus* | Wintering |

| Madison County | **Endangered** Gray bat *Myotis grisescens* | Caves |
|                | **Endangered** Indiana Bat *Myotis sodalis* | Caves, mines; small stream corridors with well developed riparian woods; upland forests |
|                | **Threatened** Bald eagle *Haliaeetus leucocephalus* | Wintering |
|                | **Endangered** Least tern *Sternula antillarum* | Bare alluvial and dredged spoil islands |
|                | **Endangered** Pallid sturgeon *Scaphirhynchus albus* | Rivers |
|                | **Threatened** Decurrent false aster *Boltonia decurrens* | Disturbed alluvial soils |

0622
Ms. Julia Donsky

<table>
<thead>
<tr>
<th>Classification</th>
<th>Common Name (Scientific Name)</th>
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</tr>
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<tbody>
<tr>
<td>Threatened</td>
<td>Eastern prairie fringed orchid</td>
<td>Mesic to wet</td>
</tr>
<tr>
<td></td>
<td><em>Platanthera leucophaea</em></td>
<td>prairies</td>
</tr>
</tbody>
</table>

The Pallid sturgeon is not likely to be found within the project area.

The gray bat (*Myotis grisescens*) is listed as endangered and considered to potentially occur in Madison County, Illinois. It inhabits caves both summer and winter. A search for this species should be made prior to any cave-impacting activities. No Federal parks or reserves are located with the areas of the proposed projects.

The endangered Indiana bat (*Myotis sodalis*) is listed as occurring in Macoupin Counties in Illinois and could potentially occur throughout the state.

During the summer, the Indiana bat frequents the corridors of small streams with well developed riparian woods as well as mature upland forests. It forages for insects along the stream corridor, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fencerows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres (33ha). It roosts and rears its young beneath the loose bark of large dead or dying trees. It winters in caves and abandoned mines.

An Indiana bat maternity colony typically consists of a primary roost tree and several alternate roost trees. The use of a particular tree appears to be influenced by weather conditions (temperature and precipitation). For example, dead trees found in more open situations were utilized more often during cooler or drier days while interior live and dead trees were selected during period of high temperature and/or precipitation. It has been shown that pregnant and neonatal bats do not thermoregulate well and the selection of the roost tree with the appropriate microclimate may be a matter of their survival. The primary roost tree, however, appears to be utilized on all days and during all weather conditions by at least some bats. Indiana bats tend to be philopatric, i.e. they return to the same roosting area year after year.
Ms. Julie Donnelly

Suitable summer habitat in Illinois is considered to have the following characteristics within a 1/2 mile radius of the project site:

1) forest cover of 15% or greater;
2) permanent water;
3) one or more of the following tree species 11 inches diameter at breast height (dbh) or greater: shagbark and shellbark hickory that may be dead or alive, and dead bitternut hickory, American elm, slippery elm, eastern cottonwood, silver maple, white oak, red oak, post oak, and shingle oak with slabs or plates of loose bark;
4) at least 1 potential roost tree per 2.5 acres;
5) potential roost trees must have greater than 10% coverage of loose bark (by visual estimation of peeling bark on trunks and main limbs).

If the project site contains any habitat that fits the above description, it may be necessary to conduct a survey to determine whether the bat is present. If Indiana bats are known to be present, they must not be harmed, harassed or disturbed when present. For small tree clearing projects Indiana bat habitat may be altered (i.e. trees cleared) only between the dates of September 1 and April 30.

The threatened bald eagle (Haliaeetus leucocephalus) is listed as wintering along large rivers, lakes and reservoirs in the following Illinois counties: Madison, Menard and Sangamon.

During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species in Illinois and the only restrictions that apply to the eagle are that it not be harassed, harmed or disturbed when present.

The least tern (Sterna antillarum) is listed as endangered. Madison County is considered to be potential habitat. It nests on bare alluvial or dredged spoil islands and sand/gravel bars in or adjacent to rivers, lakes, gravel pits and cooling ponds. It nests in colonies with other least terns and sometimes with the piping plover. There is no critical habitat designated for this species. It must not be harmed, harassed or disturbed when present.
Ms. Julie Donsky

The eastern prairie fringed orchid (Platanthera leucophaea) is listed as threatened. It may potentially occur in Macoupin, Madison, and Menard Counties, Illinois based on historical records and habitat distribution. It occupies wet grassland habitats. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever wet prairie remnants are encountered.

The decurrent false aster (Boltonia decurrens) is listed as threatened and known to occur in Madison County, Illinois (Illinois River floodplain). It is also considered to potentially occur in any county bordering the Illinois River and the counties bordering the Mississippi River between the mouths of the Missouri River and the Ohio River. It occupies disturbed alluvial soils in the floodplains of these rivers. There is no critical habitat listed for this species in Illinois.

Information regarding state protected species within the state of Illinois can be obtained from the Illinois Department of Natural Resources. They may also provide you with information regarding any state refuges or parks within the proximity of the proposed projects.

ATTN: Glen Kruse
Illinois Department of Natural Resources
Division of Natural Heritage
524 South 2nd. Street
Springfield, IL 62701-1787
(217)-785-8774

These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement.

We appreciate the opportunity to comment on this project. If you have additional questions, please contact Scott Estergard of my staff.

Sincerely,

Richard C. Nelson
Field Supervisor
# Madison County Threatened and Endangered Species

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLANTS</strong></td>
<td></td>
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</tr>
<tr>
<td>Large ground plum</td>
<td>Nuxia americana</td>
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<tr>
<td>Deconcentrated false aster</td>
<td>Eupatorium perfoliatum</td>
<td>SWL</td>
</tr>
<tr>
<td>Sweet willow plum</td>
<td>Prunus americana</td>
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<td>Trifolium whippleanum</td>
<td>SE, FT</td>
</tr>
<tr>
<td>Whippoorwill grass</td>
<td>Aristida purpurea</td>
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<td>Prairie white-fringed orchid</td>
<td>Platanthera leucophaea</td>
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<tr>
<td>Sour dock</td>
<td>Rumex obtusifolius</td>
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<td>Royal catchfly</td>
<td>Corisphytum corniculatum</td>
<td>SE</td>
</tr>
<tr>
<td>Spring ladies treacle</td>
<td>Menyanthes trifoliata</td>
<td>SE</td>
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<tr>
<td>Prairie spiderwort</td>
<td>Anchusa aculeata</td>
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<tr>
<th><strong>INVERTEBRATES</strong></th>
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<td>Burrowing beetle</td>
<td>Ctenus sp.</td>
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<td>Elephant ear mussel</td>
<td>Lepidioidea affinis</td>
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<td>Echidna mussel</td>
<td>Lepidioidea affinis</td>
<td>ST</td>
</tr>
<tr>
<td>Fat pocketbook mussel</td>
<td>Lepidioidea affinis</td>
<td>ST</td>
</tr>
<tr>
<td>Salander mussel</td>
<td>Lepidioidea affinis</td>
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<th><strong>FISHES</strong></th>
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<tr>
<td>Lake sturgeon</td>
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</tr>
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<td>Alligator gar</td>
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<td>SE</td>
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<tr>
<td>Gravel chub</td>
<td>Esox lucius</td>
<td>SWL</td>
</tr>
<tr>
<td>Silvery minnow</td>
<td>Phoxinus vulgaris</td>
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<td>Sturgeon chub</td>
<td>Acipenser fulvescens</td>
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<td>Sooty shiner</td>
<td>Cyprinella nigripinnis</td>
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<td>Flathead chub</td>
<td>Pylodictus olivaris</td>
<td>SE, FE</td>
</tr>
<tr>
<td>Pallid sturgeon</td>
<td>Psematophorus paludinosus</td>
<td>SE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>AMPHIBIANS AND REPTILES</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois chorus frog</td>
<td>Hyla versicolor</td>
<td>ST, C2</td>
</tr>
<tr>
<td>Timmer rattlerlance</td>
<td>Crotalus ruber</td>
<td>ST, C2</td>
</tr>
<tr>
<td>Great Plains rib snake</td>
<td>Elaphe guttata emoryi</td>
<td>ST, C2</td>
</tr>
<tr>
<td>Eastern massasauga</td>
<td>Sistrurus catenatus</td>
<td>ST, C2</td>
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</tbody>
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<table>
<thead>
<tr>
<th><strong>BIRDS</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upland sandpiper</td>
<td>Plectropterus gambittianus</td>
<td>SE</td>
</tr>
<tr>
<td>Red-headed woodpecker</td>
<td>Dryocopus americana</td>
<td>SE</td>
</tr>
<tr>
<td>Great egret</td>
<td>Egretta albus</td>
<td>ST</td>
</tr>
<tr>
<td>Little blue heron</td>
<td>Egretta caerulea</td>
<td>SE</td>
</tr>
<tr>
<td>Snowy egret</td>
<td>Egretta thula</td>
<td>SE</td>
</tr>
<tr>
<td>Peregrine falcon</td>
<td>Falco peregrinus</td>
<td>SE</td>
</tr>
<tr>
<td>Common moorhen</td>
<td>Gallinula chloropus</td>
<td>SE</td>
</tr>
<tr>
<td>Black-crowned night heron</td>
<td>Nycticorax nycticorax</td>
<td>SE</td>
</tr>
<tr>
<td>Pied-billed grebe</td>
<td>Podilymbus podiceps</td>
<td>SE</td>
</tr>
<tr>
<td>King rail</td>
<td>Rallus elegans</td>
<td>SE</td>
</tr>
<tr>
<td>Least tern</td>
<td>Sterna antillarum</td>
<td>SE</td>
</tr>
<tr>
<td>Snowy egret</td>
<td>Threskiornis corymbi</td>
<td>SE, FE</td>
</tr>
<tr>
<td>Yellow-headed blackbird</td>
<td>Xanthocephalus xanthocephalus</td>
<td>SE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MAMMALS</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray fox</td>
<td>Vulpes fulva</td>
<td>SE, FE, KS</td>
</tr>
<tr>
<td>Illinois bat</td>
<td>Myotis grisescens</td>
<td>SE, FE, KS</td>
</tr>
<tr>
<td>Indian bat</td>
<td>Myotis sodalis</td>
<td>SE, FE, KS</td>
</tr>
</tbody>
</table>

**STATUS LEGEND AND DEFINITIONS:**

- **SE**: State endangered; any species which is in danger of extinction as a breeding species in Illinois.
- **ST**: State threatened; any breeding species which is likely to become a state endangered species within the foreseeable future in Illinois.
- **SWL**: State watch list; species for which there are questions about status which can not be answered currently available data.
- **FE**: Federally endangered; any species which is in danger of extinction throughout all or a significant portion of its range.
- **FT**: Federally threatened; any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- **C2**: Candidate for federal listing.
- **KS**: Karst sensitive.

Note: This list is current only as of the date of its preparation. It should not be used as an all inclusive list of sensitive species within the county, but only as an informational guide. Additional species may be added at any time without updating this list. Local units of government are required by law to engage in the the Illinois Department of Natural Resources Division of Natural Heritage endangered species consultation process prior to changes in land use.

This list was prepared on July 10, 1995 by Illinois Dept. of Natural Resources District 10 Natural Heritage Biologist Scott R. Ballard.
Ms. Julie Donsky  
Environmental Scientist  
Dames and Moore  
One Continental Towers  
1701 Golf Road, Suite 1000  
Rolling Meadows, Illinois 60008

Dear Ms. Donsky:

This responds to your letter of September 30, 1995, requesting information for an Environmental Report pertaining to the proposed merger of Union Pacific and Southern Pacific Railroads. Your request concerns construction within Macoupin, Marion, Sangamon, and St. Clair Counties of Illinois.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. Therefore, we are furnishing you the following list of species which may be present in the concerned area:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Common Name (Scientific Name)</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macoupin County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endangered</td>
<td>Indiana Bat Myotis sodalis</td>
<td>Caves, mines; small stream corridors with well developed riparian woods; upland forests</td>
</tr>
<tr>
<td>Threatened</td>
<td>Eastern prairie fringed orchid Platanthera leucophaea</td>
<td>Mescic to wet prairies</td>
</tr>
<tr>
<td>County</td>
<td>Status</td>
<td>Species</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Marion County</td>
<td>Endangered</td>
<td>Indiana Bat <em>Myotis sodalis</em></td>
</tr>
<tr>
<td>Sangamon County</td>
<td>Endangered</td>
<td>Indiana Bat <em>Myotis sodalis</em></td>
</tr>
<tr>
<td></td>
<td>Threatened</td>
<td>Bald eagle <em>(Haliaeetus leucocephalus)</em></td>
</tr>
<tr>
<td>St. Clair County</td>
<td>Endangered</td>
<td>Indiana Bat <em>Myotis sodalis</em></td>
</tr>
<tr>
<td></td>
<td>Threatened</td>
<td>Bald eagle <em>(Haliaeetus leucocephalus)</em></td>
</tr>
<tr>
<td></td>
<td>Endangered</td>
<td>Pallid sturgeon <em>(Scaphirynchus albus)</em></td>
</tr>
<tr>
<td></td>
<td>Threatened</td>
<td>Decurrent false aster <em>(Boltonia decurrens)</em></td>
</tr>
<tr>
<td></td>
<td>Endangered</td>
<td>Running buffalo clover <em>Trifolium stoloniferum</em></td>
</tr>
</tbody>
</table>

The endangered Indiana bat *(Myotis sodalis)* is listed as Macoupin County in Illinois and could potentially occur throughout the state.

During the summer, the Indiana bat frequents the corridors of small streams with well developed riparian woods as well as mature upland forests. It forages for insects along the stream corridor, within the canopy of floodplain and upland forests.
Ms. Julie Donsky

over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fencerows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres (33ha). It roosts and rears its young beneath the loose bark of large dead or dying trees. It winters in caves and abandoned mines.

An Indiana bat maternity colony typically consists of a primary roost tree and several alternate roost trees. The use of a particular tree appears to be influenced by weather conditions (temperature and precipitation). For example, dead trees found in more open situations were utilized more often during cooler or drier days while interior live and dead trees were selected during period of high temperature and/or precipitation. It has been shown that pregnant and neonatal bats do not thermoregulate well and the selection of the roost tree with the appropriate microclimate may be a matter of their survival. The primary roost tree, however, appears to be utilized on all days and during all weather conditions by at least some bats. Indiana bats tend to be philopatric, i.e. they return to the same roosting area year after year.

Suitable summer habitat in Illinois is considered to have the following characteristics within a 1/2 mile radius of the project site:

1) forest cover of 15% or greater;
2) permanent water;
3) one or more of the following tree species 11 inches diameter at breast height (dbh) or greater: shagbark and shellbark hickory that may be dead or alive, and dead bitternut hickory, American elm, slippery elm, eastern cottonwood, silver maple, white oak, red oak, post oak, and shingle oak with slabs or plates of loose bark;
4) at least 1 potential roost tree per 2.5 acres;
5) potential roost trees must have greater than 10% coverage of loose bark (by visual estimation of peeling bark on trunks and main limbs).

If the project site contains any habitat that fits the above description, it may be necessary to conduct a survey to determine whether the bat is present. If Indiana bats are known to be present, they must not be harmed, harassed or disturbed when present. For small tree clearing projects Indiana bat habitat may be altered (i.e trees cleared) only between the dates of September 1 and April 30.

The threatened bald eagle (Haliaeetus leucocephalus) is listed as wintering along large rivers, lakes and reservoirs in the following Illinois counties: Sangamon and St. Clair.
Ms. Julie Donsky

During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species in Illinois and the only restrictions that apply to the eagle are that it not be harassed, harmed or disturbed when present.

The eastern prairie fringed orchid (**Platanthera leucophaea**) is listed as threatened. It may potentially occur in Macoupin County, Illinois based on historical records and habitat distribution. It occupies wet grassland habitats. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever wet prairie remnants are encountered.

The decurrent false aster (**Boltonia decurrens**) is listed as threatened and known to occur in St. Clair County, Illinois (Mississippi River floodplain). It is also considered to potentially occur in any county bordering the Illinois River and the counties bordering the Mississippi River between the mouths of the Missouri River and the Ohio River. It occupies disturbed alluvial soils in the floodplains of these rivers. There is no critical habitat listed for this species in Illinois.

The running buffalo clover (**Trifolium stoloniferum**) is listed as endangered in Illinois. Although there are no currently known occurrences, it is considered to potentially occur in St. Clair County based on historical records. It occupies disturbed bottomland meadows. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law.

The pallid sturgeon is not likely to be found within the project area.

These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under
Ms. Julie Donsky

Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement.

We appreciate the opportunity to comment on this project. If you have additional questions, please contact Scott Estergard of my staff.

Sincerely,

Wayne A. Fische
Richard C. Nelson
Field Supervisor

cc: MISO (Collins)

SE:am
# RARE, THREATENED, AND ENDANGERED SPECIES IN THE AREA OF ABANDONMENTS AND/OR CONSTRUCTION SITES IN KANSAS

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluted shell</td>
<td>Lasmigona costata</td>
<td>S(T)</td>
</tr>
<tr>
<td>American burying beetle</td>
<td>Necrophorus americanus</td>
<td>F(E)</td>
</tr>
<tr>
<td>Speckled chub</td>
<td>Macrhybopsis aestivalis tetranemus</td>
<td>S(E)</td>
</tr>
<tr>
<td>Sturgeon chub</td>
<td>Macrhybopsis gelida</td>
<td>S(T)</td>
</tr>
<tr>
<td>Arkansas darter</td>
<td>Etheostoma cragini</td>
<td>S(T)</td>
</tr>
<tr>
<td>Arkansas river shiner</td>
<td>Notropis girardi</td>
<td>F(PE)</td>
</tr>
<tr>
<td>Topeka shiner</td>
<td>Notropis topeka</td>
<td></td>
</tr>
<tr>
<td>Western green toad</td>
<td>Bufo debilis insidior</td>
<td>S(T)</td>
</tr>
<tr>
<td>New Mexico blind snake</td>
<td>Leptotyphlops dulcis dissectus</td>
<td>S(T)</td>
</tr>
<tr>
<td>Checkered garter snake</td>
<td>Thamnophis marcianus</td>
<td>S(T)</td>
</tr>
<tr>
<td>White-faced ibis</td>
<td>Plegadis chihi</td>
<td>F(C2)</td>
</tr>
<tr>
<td>Bald eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>F(T)</td>
</tr>
<tr>
<td>Peregrine falcon</td>
<td>Falco peregrinus</td>
<td>F(E)</td>
</tr>
<tr>
<td>Whooping crane</td>
<td>Grus americana</td>
<td>F(E)</td>
</tr>
<tr>
<td>Snowy plover</td>
<td>Charadrius alexandrinus</td>
<td>S(T)</td>
</tr>
<tr>
<td>Piping plover</td>
<td>Charadrius melodus</td>
<td>F(T)</td>
</tr>
<tr>
<td>Mountain plover</td>
<td>Charadrius montanus</td>
<td>F(C1)</td>
</tr>
<tr>
<td>Eskimo curlew</td>
<td>Numenius borealis</td>
<td>F(E)</td>
</tr>
<tr>
<td>Least tern</td>
<td>Sterna antillarum</td>
<td>F(E)</td>
</tr>
<tr>
<td>Eastern spotted skunk</td>
<td>Spilogale putorius</td>
<td>S(T)</td>
</tr>
<tr>
<td>Black-footed ferret</td>
<td>Mustela nigripes</td>
<td>F(E)</td>
</tr>
</tbody>
</table>

F = Federal;  
S = State;  
(E) = Endangered;  
(PE) = Proposed Endangered;  
(1) = Threatened;  
(C1) = Category 1 Candidate;  
(C2) = Category 2 Candidate