

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Least Bell's Vireo

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines the least Bell's vireo (*Vireo bellii pusillus*) to be an endangered species. This action is being taken because loss of habitat has greatly restricted the vireo's breeding range, and nest parasitism by the brown-headed cowbird (*Molothrus ater*) has greatly reduced nesting success within much of its remaining breeding habitat. The action is based, in part, on a petition received by the Service on November 8, 1979. The least Bell's vireo presently occurs in southwestern California and northwestern Baja California, Mexico, an area representing only a fraction of its former range. The final decision on determination of critical habitat included in the proposed rule is postponed in accordance with section 4(b)(6)(C) of the Endangered Species Act. The rule provides protection to all populations of this bird.

DATES: The effective date of this rule is June 2, 1986. In a separate document published in today's Federal Register, the Service reopens the comment period on the proposed critical habitat designation.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Lloyd 500 Building, 500 NE Multnomah Street, Suite 1692, Portland, Oregon 97232.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne S. White, Chief, Division of Endangered Species, at the above address (503/231-6131 or FTS 429-6131).

SUPPLEMENTARY INFORMATION:**Background**

The least Bell's vireo is a small, gray, migratory songbird that feeds mainly on insects. The bird usually constructs its nest low in thickets along willow-dominated riparian habitats. The normal clutch of four eggs is incubated about 14 days. The young remain in the nest approximately 10-12 days. The least Bell's vireo arrives in its breeding habitat in mid-March to early April, and

departs in late August and September for its wintering range in Mexico.

Three other subspecies of Bell's vireo are recognized by the American Ornithologists' Union (1957): *Vireo bellii bellii* of the midwestern United States; *V. b. medius* of Texas; and *V. b. arizonae* of the southwestern United States and northern Mexico. While all are fairly similar in behavior and life history, all the subspecies are geographically separated on their breeding ranges (Hamilton 1962). Virtually all Bell's vireos winter in Mexico.

The least Bell's vireo occupies a more restricted nesting habitat than the other subspecies. It primarily inhabits dense, willow-dominated riparian habitats with lush understory vegetation, which is limited to the immediate vicinity of water courses. The other subspecies of Bell's vireo also inhabit upland areas such as desert scrub. Thus, the narrow and limited nature of the habitat of the least Bell's vireo makes the subspecies more susceptible to major population reductions than are the other subspecies. At the present time no population of more than five pairs is known to occur below a major water control project.

Least Bell's vireos are known to nest primarily in willows but also use a variety of shrubs, trees, and vines. The birds forage in riparian and adjoining chaparral habitat (Salata 1983a). Preliminary studies of vireo foraging behavior along the Santa Ynez River and within the Mono Creek Basin (Santa Barbara County) indicate that more than 50 percent of the foraging occurs in the adjacent chaparral community; approximately 70 percent of the foraging observations were obtained from about 200 to 300 yards from the nest (Tom Keeney, biologist, U.S. Army Corps of Engineers, personal communication, July 31, 1985).

No other passerine (perching songbirds) species in California is known to have declined as dramatically as the least Bell's vireo. It primarily nests in small, remnant segments of willow-dominated riparian habitats. Most populations contain less than five breeding pairs. Once widespread and abundant throughout the Central Valley and other low-elevation riverine valleys, its historical breeding range extended from interior northern California (near Red Bluff, Tehama County) to northwestern Baja California, Mexico. In the last several decades, the subspecies apparently has been totally extirpated from the Sacramento and San Joaquin Valleys, which once were at the center of its breeding range. Its breeding range is now restricted (as of 1983-1984) to

several localities in the Salinas River Valley, Monterey and San Benito Counties; one locality (as of 1979) along the Amargosa River, Inyo County; and numerous small populations in southern California south of the Tehachapi Mountains and in northwestern Baja California, Mexico.

Widespread loss of riparian habitats and brood parasitism by the brown-headed cowbird (*Molothrus ater*) have precipitated the decline in the least Bell's vireo. Destruction of riparian woodlands may have rendered the least Bell's vireo incapable of withstanding the spectacular increase in brown-headed cowbirds that began in the 1920's (Grinnell and Miller 1944, Gaines 1974, Laymon 1980). The population decline of the vireo has been well documented.

In 1973 no least Bell's vireo was found during an intensive search in formerly occupied habitat between Red Bluff, Tehama County, and Stockton, San Joaquin County (Gaines 1974). In 1977, the U.S. Fish and Wildlife Service reviewed the literature, examined museum material, and contacted numerous National Audubon Society chapters and knowledgeable field observers for information on the status of the least Bell's vireo (Wilbur 1980a).

Since then, several intensive vireo surveys of virtually all potential breeding habitat in California have been conducted (Gaines 1977, Goldwasser 1978, Goldwasser *et al.* 1980, unpublished Fish and Wildlife Service data). In total, least Bell's vireos have been reported from only 46 of over 150 former localities (some localities cover several miles of a water course) surveyed in the U.S. from 1977 through 1985. The surveys are based upon singing (or territorial) males. Counts of such males are an index to the population levels and are considered to be the maximum number present, since one male in five may not be paired or breeding at the time of the count. Based on this information, the present breeding population status of least Bell's vireo per county in California is as follows:

County	Sites*	Males*
San Benito.....	1	1
Monterey.....	0	0
Inyo.....	0	0
San Bernardino.....	0	0
Santa Barbara.....	3	26
Ventura.....	1	5
Los Angeles.....	2	6
Orange.....	1	1
Riverside.....	8	29
San Diego.....	30	223
Total.....	46	291

* Number of different known breeding localities.

* Number of known territorial males.

* No known breeding in 1985.

Based on surveys conducted from 1977 to 1985, the Service estimates that approximately 300 territorial male least Bell's vireos occur in California (Fish and Wildlife Service, unpublished data). Preliminary surveys in Baja California, Mexico, resulted in the location of a number of small populations, but suitable habitat is declining and limited (Wilbur 1980b). There are probably several hundred breeding pairs in Baja California (Wilbur 1980b).

On November 8, 1979, the Service received a petition from James M. Greaves to list the Arizona and least Bell's vireos as endangered. A notice of acceptance of the petition and status review was published on February 6, 1980 (FR 8030). Based on the best scientific and commercial data available and other comments submitted during the status review, the Service found that the petitioned action was warranted for the least Bell's vireo on October 13, 1983 (49 FR 2485, January 20, 1984); however, action was precluded by other pending listing actions, in accordance with section 4(b)(3)(C)(i) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*). Section 4(b)(3)(C)(i) recycles such petitions, which resulted in a new finding deadline of October 13, 1984. A finding was made October 12, 1984, that this action on the least Bell's vireo was still warranted but precluded. Publication of the proposed rule appeared on May 3, 1985 (50 FR 18968), fulfilling the next finding required under section 4(b)(3)(B)(ii) of the Act.

Information generated from the above February 6, 1980, Notice of Status Review indicates that the Arizona Bell's vireo is relatively common and widely distributed in a variety of habitats in Arizona, New Mexico, and Mexico. It is not primarily restricted to early riparian successional stages as is *V. b. pusillus*. Although density estimates of *V. b. arizonae* along the Colorado River and adjacent areas are very low, the subspecies appears to be doing well throughout most of its geographical range (USFWS status review data). Thus, the proposal published by the Service was restricted to the least Bell's vireo (*V. b. pusillus*). A finding that the petitioned action for the Arizona Bell's vireo was not warranted was published January 20, 1984 (49 FR 2487).

Summary of Comments and Recommendations

In the May 3, 1985, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies,

scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice was published in the *Blade Tribune* (May 31, 1985), *San Diego Transcript* (May 29, 1985), *San Bernardino Sun* (May 29, 1985), *San Diego Tribune* (May 30, 1985), *News Press* (May 29, 1985), *Enterprise* (May 31, 1985), *Los Angeles Times* (June 7, 1985), *Riverside Press* (May 30, 1985), and *San Diego Union* (May 30, 1985), all of which invited general public comment. A public hearing was requested by a number of interested parties. Public hearings were conducted in San Diego on July 30, 1985; in Oxnard on July 31, 1985; and in Anaheim, on August 1, 1985. A total of 370 individuals attended the hearings. Notification of the public hearings and an extension of the comment period to August 30, 1985, was published on July 9, 1985 (50 FR 27992). An additional notification extending the comment period to December 2, 1985, was published on October 3, 1985 (50 FR 40424). These two additional notifications were also published in the aforementioned nine newspapers in July and October, respectively.

During the comment period, totaling approximately 6 months, 219 comments on listing were received. Of the 180 comments that stated a position on listing, 171 (95%) supported listing and 9 (5%) did not; 39 comments were non-substantive. These comments are discussed below.

Support for the listing proposal was voiced by four elected officials, California Department of Fish and Game, several local government entities, 15 conservation organizations (or branches thereof), and 139 other interested parties.

Little opposition was received regarding the need to list the least Bell's vireo; however, concern over the listing was voiced from three local agencies, one organization, two landowners, and three other private parties. A number of developers, landowners, local agencies, several State agencies including the California Department of Transportation, and local governments submitted comments regarding the possible effects that listing, and particularly, designation of critical habitat, might have on planned activities and development.

Because of the complexity of the economic analysis that must accompany the final rule designating critical habitats and the large number of comments and data received on these habitats, the Service has decided to make final only the listing portion of this

rule at this time so that immediate protection of the least Bell's vireo would be possible. Section 4(b)(6)(C)(ii) of the Act allows the Service to extend the deadline for designating critical habitat for up to one year (May 3, 1987, in this case), if critical habitat is not yet determinable and/or immediate protection is needed for the species through a final listing action. Both of these reasons apply in this instance; therefore, the Service is now going forward with this final listing rule. Hence, the comments pertaining to designation of critical habitat or the potential economic impacts of such designation will not be discussed here but will be addressed when a final decision on critical habitat is made. Only comments addressing the issue of listing this species are responded to here. Numerous comments on administrative procedures, document availability, and future management of the vireo were received. Those comments that do not address the issue of listing will not be specifically responded to here.

Written comments and oral statements obtained during the public hearings and comment periods are combined in the following discussion. Opposing comments and other comments questioning the rule can be placed in a number of general groups, depending on content. These categories of comment, and the Service's response to each, are listed below.

Comment 1: What studies were used by the Service to support the decision to list the vireo and where are these available for review?

Service response: The studies reviewed by the Service are listed in the Reference Cited section of the proposed rule and in this final rule. In some cases, the data were supplied by personal communication with field biologists. Cited reports are available in the Service's Regional Office in Portland, Oregon, or in the Laguna Niguel, California, and Sacramento, California, field offices. Articles that were published in journals and were cited are available in many university libraries.

Comment 2: The notices for the public hearings and comments were inadequate and were not made public.

Service response: The Service's notification process is extensive and is summarized at the beginning of this section. The Service is required to publish a notice in local newspapers soliciting comments on the proposal and stating the particulars of any public hearing, if such is scheduled; to give notice of the proposal to appropriate scientific organizations; and to hold a

public hearing, if requested to do so within 45 days of the date of publication of the proposed rule. All requirements pertaining to the notification process were met by the Service as indicated at the beginning of this section.

Comment 3: The least Bell's vireo is already protected because it is listed as an endangered species by the State of California. Nesting habitat is adequately protected by county policies and State procedures. Section 4(b)(1)(A) of the Act states that those efforts being made by any state or political subdivision to protect such species must be considered in the decision to designate the species as federally listed.

Service response: In 1980 the least Bell's vireo was listed as endangered by the State of California. Since that time vireo numbers have continued to decline throughout most of its range. As set forth under Factor E in the section below on Summary of Factors Affecting the Species, the recent increases along the Santa Margarita River can be attributed to an active cowbird trapping program and not to a natural increase. Vireo habitat continues to disappear and/or be adversely modified in spite of its State listing. Recognition of the least Bell's vireo as a federally listed species will provide additional protection and the further potential for restoring its habitat and for managing the bird.

Comment 4: Significant habitat has been developed along minor streams and in narrow canyons from agricultural runoff. Expansion of the imported water supply and hillside agriculture has changed the runoff pattern so that year-round flow is now common. Riparian vegetation, especially willows, has developed in these narrow canyons and may be suitable for least Bell's vireos. These areas should be surveyed before any action is taken on listing the least Bell's vireo.

Service response: The Service is obligated to use the best available biological information to determine whether a species warrants listing. The Service has checked many sites with this type of habitat and found virtually no vireos. No data are currently available to support the suggestion that these small willow-dominated areas created by agricultural runoff or other small sites are important to the known status of the vireo or that such areas may be used for breeding purposes by vireos. The future of these artificially-created habitats is precarious because agricultural runoff water can be discontinued at any time. Alternatively, over time these habitats may be otherwise suitable for several decades, but may become too mature for the vireo because of a lack of scouring or other

forces needed for long-term habitat maintenance. Mature riparian forests are not selected by the vireos for nesting; the birds select younger growths of willows and associated vegetation. The total number of vireos using such habitats (i.e., from agricultural runoff), even in the aggregate, appears to be very small.

Comment 5: In the Fallbrook area, habitat losses are not attributable to agricultural development. In fact 25-30 percent of all irrigation water applied to orchards ends up as return flow into channels. During 1975-1985 when most of the orchards were planted, the nitrate rich runoff water contributed significantly to enhancing the depth and breadth of the willow groves where little growth occurred previously.

Service response: The Service evaluated the past and current threats to determine if the least Bell's vireo should be designated as endangered. This evaluation indicates that conversion of land throughout the range of the vireo for agricultural purposes; pumping to withdraw water for crop maintenance; and construction of dams, channels, and other water conveyance systems have resulted in the loss of substantial vireo habitat. Agricultural practices have also inadvertently encouraged the expansion of the range of the brown-headed cowbird (Wilbur 1980a, Laymon 1980).

As far as the Fallbrook area is concerned, no data were supplied or available to the Service indicating that agricultural runoff was largely responsible for creating these willow habitats. There are other possible explanations for these changes. For example, as 1978-1980 were particularly wet years in this area, it appears possible that the recharging of the groundwater table after a lengthy dry period may have contributed to some of the new or expanded willow growth. Ground water may allow for riparian growth, but it does not provide for the periodic scouring that is a principal feature of the riparian habitat normally used by the vireo. Many riparian plants are routinely scoured by heavy water flows. The regrowth referred to by the commenter may be a response to natural patterns of scouring and regrowth rather than to the agricultural runoff. Periodic scouring would have to recur in order to maintain the vireo habitat in its early successional stages.

Comment 6: It is incorrect to say that San Diego County has sustained a loss of habitat. For example, the Tijuana River was devoid of riparian vegetation until the 100-year flood in 1980 caused regrowth. As the result of water importation, many new habitats have been created, supporting many more

least Bell's vireos in southern California. All species of birds have increased because of the greater availability of water, including the native cowbird. In fact, the least Bell's vireo is not endangered.

Service response: Importation of water and groundwater pumping has encouraged agricultural conversion of riparian habitat because of a reliable, constantly available, and relatively inexpensive source of water. Some habitat undoubtedly has been created by agricultural runoff, but it appears to mainly entail small, isolated islands of riparian habitat that are little used by vireos. The creation of such isolated pockets of riparian habitat does not offset the more widespread losses of larger riparian areas in the past 80 years. There is no evidence to support the contention that the brown-headed cowbird is a native species of California, with the possible exception of a portion of the lower Colorado River and as an occasional vagrant. Its range expansion to the north and west has been well documented since the early 1900's (Laymon 1980).

There is no evidence to support the contention that all species of birds have increased in southern California as the result of importation of water or for any other reason. On the contrary, available data indicate that numerous species are experiencing declines in population numbers, several bird species are listed as endangered in southern California, and a number of species are considered candidates for listing. The Tijuana River, prior to settlement, was subject to regular scouring floods. Flood control projects in Mexico and agricultural practices in San Diego County had largely eliminated the habitat of the vireo sometime prior to the 1960's.

Comment 7: Surveys for the least Bell's vireo were started during a time of very adverse hydrologic conditions and the results are not representative of actual conditions today. A 32-year drought (1946-1977) ended with abnormally high rainfall in 1978. During 1978-1980, rainfall was exceptionally heavy. Only in the last year has large-scale regrowth of willows occurred to the extent that protected nesting sites were available to the least Bell's vireo. As the level of water in groundwater basins declines, there will be times when habitat will contract and disappear. The importance of a perennial water supply in creating and maintaining riparian vegetation should be assessed. Also, heavy precipitation and runoff from the wet winters (1978 to 1983) caused an increase in the width of some riparian habitat. Because the

recent wet period has ended, much of the recently expanded vegetation is expected to die back. Long-term protection should concentrate on riparian habitat that is dependent on stream flow and not currently existing groundwater sources.

Another commenter offered views directly contrary to the above and stated that many climatologists believe the weather has been unusually benign the last 30 years and that climate is now returning to the normal pattern of instability. Dry periods will be drier and wet periods will be wetter. Groundwater in the river basins will be the most stable element because of its ability to absorb, store, and slowly release accumulated surface flows. Unless additional dams are constructed and/or excessive pumping is done, the groundwater basin will continue to recharge and support willows as it has in the past.

Service response: The riparian ecosystems required by the vireo are dynamic systems, and the scouring of vegetation during periodic floods is required to create the low dense vegetation favored by the bird. At the present time, the Service knows of no significant numbers of vireos inhabiting below any major water control project in California or Mexico. Therefore, a surge of groundwater flow to surface flows would be required for scouring to maintain habitat quality. Otherwise, the willows will grow beyond the needs of the vireo, and a riparian forest will be created, which is habitat unsuitable to vireos. This is part of the problem in the Central Valley of California.

Natural expansion and contraction of riparian habitat is expected. However, because of the very low number of vireos, extensive contractions of habitat for more than a couple of years may suppress vireo numbers and reproduction to a point from which they could not recover.

Whether or not vireo habitat can be maintained by groundwater basins has bearing on the need to list the vireo. Groundwater tables apparently are in good condition now because of the series of wet winters, yet the vireo is still suffering from low numbers. As indicated above, high ground water levels (or low stream floods) allows the riparian vegetation to mature beyond the needs of the vireo. Periodic and regular scouring floods or some other agent must cause the habitat to revert to early successional stages. Willows and other vegetation over several yards (meters) in height are of little value to the vireo, except for some feeding.

Comment 8: Suitable habitat for the least Bell's vireo is plentiful. Rather than

habitat being the critical limiting factor, it is predation and parasitism that are primarily responsible for the vireo's low numbers. Loss of riparian habitat and urban encroachment are clearly secondary factors. The San Luis Rey River and other existing and potential habitat in southern California have the capacity to support large populations of least Bell's vireos. During a 1978 survey of 69 miles (110 kilometers) of potential nesting habitat along the San Luis Rey River, Goldwasser (1978) found that only 13 miles (21 kilometers) or 19 percent of the habitat was occupied. What is the relative contribution of cowbird parasitism towards extinction of the vireo versus habitat disturbance?

Service response: The least Bell's vireo has been extirpated from over 95 percent of its former range. The contraction of range and reduction in numbers from a "common" species to an "extremely rare" one, has resulted, in part, from loss and/or adverse modification of habitat as described in the Summary of Factors Affecting the Species section. The Service also recognizes the substantial adverse impact from nest parasitism and predation. However, the Service has seen no evidence to document that cowbird parasitism plays the sole or primary role in the reduction in vireo numbers and range. The Service agrees that some apparently suitable vireo habitat is unoccupied, possibly because the previous population has been extirpated and vireo numbers are not high enough to provide a substantial pool of individuals to recolonize. In summary, the Service believes that the vireo is endangered by a combination of these factors and that the loss of habitat has been a significant contributory element along with the cowbirds.

Comment 9: Many wildlife species are numerous at Prado Dam only because of the artificial expansion of the riparian habitat created by the operation of Prado Dam.

Service response: Historically the Prado Basin area and adjacent Santa Ana River supported large numbers of wildlife species. Channelizing and concrete lining of the majority of the Santa Ana River downstream of Prado Dam has greatly diminished the amount of riparian habitat available for wildlife. Prado Dam encompasses an area that contained large amounts of riparian vegetation, much of which was destroyed when the basin was first flooded. Prado Dam may provide more wildlife habitat in Prado Basin than the latter had historically. In the Service's review of the status of the least Bell's vireo, the Service has considered the large reduction (hundreds of miles) in

available riparian habitat throughout the vireo's overall range, not just the Santa Ana River area. Only two pairs of vireos are known to breed below Prado Dam on the Santa Ana River.

Comment 10: Riparian habitat along the San Dieguito River in the San Pasqual Valley did not exist in the 1950's prior to acquisition by the City of San Diego or in the 1960's prior to the sand mining activities associated with development of the flood control channels.

Service response: The presence of riparian vegetation as discussed in the response to a previous comment is dependent upon a number of factors. The San Pasqual Valley is owned by the City of San Diego and is an agricultural preserve. Riparian vegetation in the valley is limited by agricultural and sand mining operations. The Service believes that the San Dieguito River was typical of rivers in the area and was capable historically of supporting suitable riparian vegetation for least Bell's vireo. Construction of the Sutherland Dam approximately 50 years ago along the San Dieguito River resulted in loss of suitable vireo habitat downstream. The Service received no data to support the suggestion that sand mining operations or the City of San Diego have contributed directly to the establishment of significant amounts of riparian habitat where historically there has been none. Some suitable habitat is present now and is supporting a limited number of breeding least Bell's vireos.

Comment 11: The Service needs to assess the impacts on the survival of least Bell's vireos if no Federal or State projects are permitted, thereby eliminating a source of funding for habitat restoration.

Service response: The Service must base its decision to list a species on the five factors given in the "Summary of Factors Affecting the Species" section as mandated by the Act. Economics may not be considered in making the final decision on a listing proposal. It is not the intention of the Service to stop Federal or other projects. However, projects involving Federal funding or approval will be evaluated through the Section 7 consultation process. If through consultation the Service determines that a Federal project is likely to jeopardize the continued existence of the least Bell's vireo or result in the destruction or adverse modification of any designated critical habitat, which may be determined later, the Service may recommend reasonable and prudent alternatives to the proposed action.

Comment 12: The least Bell's vireo does not currently nest in Prado Basin. In the near future conditions will be too inhospitable for the vireo. The bird should have been protected years ago before plans were made to develop the area. The natural living and breeding habits of the vireo are not conducive to long-term preservation.

Service response: Recent surveys indicate that the vireo population in the Prado Basin-Santa Ana River area has declined to 14 territorial males (U.S. Fish & Wildlife Service, unpublished data). Cowbirds are ubiquitous in much of this area and are seriously reducing vireo productivity. The Service believes that with a suitable cowbird control program, vireo numbers in this area would increase. Plans to develop the area are a further indication that habitat loss and modification are a continuing threat to the vireo.

Comment 13: According to a description of the species and information on its range found in a field guide, the Bell's vireo is widespread and therefore not endangered.

Service response: The cited field guide was referring to the full species of Bell's vireo. The least Bell's vireo is one of four subspecies of Bell's vireo. Restricted to less than 5 percent of its original breeding habitat in California, the least Bell's vireo has approximately 300 territorial males in the United States and an undetermined number (thought to number several hundred pairs) in Mexico. The other three subspecies do not now appear to be at any risk to their continued existence.

Comment 14: Even with preservation of habitat, is it not too late to save the vireo?

Service response: The Service believes that it is not too late and an active recovery program will substantially augment vireo numbers to a point where extinction is far less probable. Prospect for recovery, however, is not a factor to be considered in listing a species (see below).

Comment 15: Listing the least Bell's vireo is premature. The listing process should be suspended for 24 months during which time local agencies will establish a cooperative cowbird trapping program. Local policies will be reviewed and modified to increase protection. Listing is only a passive response, whereas the above program would provide an actual process to conserve the least Bell's vireo.

Service response: The State of California listed the least Bell's vireo as endangered in 1980. The species continues to lose habitat and decline. The Service has carefully reviewed the status of the vireo and believes

immediate listing is warranted. A host of actions will be required to conserve the least Bell's vireo, only one of which is cowbird control. While the desire of local agencies to aid in vireo recovery actions is commendable, the Service recognizes that more far reaching action is required. There is also no provision in the Act to delay listing for 24 months. The Service can postpone listing for 6 months pursuant to section 4(b)(6)(B)(i) of the Act but only if substantial disagreement among experts exists regarding the sufficiency or accuracy of the available data on the status of the species. No such disagreement exists for the least Bell's vireo.

Comment 16: Many comments anticipated future Section 7 consultations on Federal projects involving habitat areas occupied by the least Bell's vireo. Highway projects, oil drilling, recreational facilities, and other types of construction activities were identified. One comment implied that the "traditional concept of mitigation" could be used to resolve project impacts if no critical habitat was designated.

Service response: Federal agencies are required to consult formally with the Service if they propose to authorize, fund, or carry out any activity that may affect the least Bell's vireo, wherever these birds are found and regardless of any critical habitat designation.

Through formal consultation with the Service, the Federal agency determines whether, and in what manner, it can carry out its action consistent with the "jeopardy" prohibition of section 7(a)(2). The traditional concept of mitigation does not control in the assessment of the likelihood of jeopardy. If the Service finds that the action is not likely to jeopardize the vireo, then project modifications are not required by section 7(a)(2). However, if it is determined that the action is likely to jeopardize the continued existence of the vireo, then reasonable and prudent alternatives to the proposal should be considered. Such alternatives, which satisfy the requirements of Section 7(a)(2), may also involve significant project modifications.

Comment 17: Several commenters requested that the Service prepare an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) before issuing a critical habitat rule.

Service response: For the reasons set out in the NEPA section toward the end of this document, the Service takes the position that rules issued pursuant to section 4(a) of the Endangered Species Act, including critical habitat rules, do not require the preparation of an EIS.

To summarize the comments and data provided under the proposal, the Service received no data indicating that the status of the vireo is far healthier than previously thought, that there were "thousands of vireos" still breeding in California, or that large blocks of appropriate habitat can be found below flood control dams or in some other parts of California or Mexico. No data were presented contradicting the effects of cowbirds on the reproductive success of the vireos. A few hundred pairs of vireos in several dozen locations exist in California, with probably similar numbers in Baja California, Mexico.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the least Bell's vireo (*Vireo bellii pusillus*) should be classified as an endangered species. Procedures found at section 4(a)(1) of the Act and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the least Bell's vireo (*Vireo bellii pusillus*) are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range. The least Bell's vireo is predominantly restricted to dense riparian habitat on its breeding range in California and northwestern Baja California. Over 95 percent of historic riparian habitat has been lost throughout its former breeding range in the Central Valley of California, which may have accounted for 60-80 percent of the original population. Similar habitat losses have also occurred throughout its remaining stronghold in southern California, and habitats are currently declining in Baja California as well (Wilbur 1980b). These widespread losses are mainly attributable to flood control and water development projects, agricultural development, livestock grazing, invasive exotic plants, off-road vehicles, and urban development resulting from rapidly expanding human populations. Despite growing concern at all levels of government for declining riparian vegetation, substantial amounts of riparian habitat continue to be lost each year.

In summary, with about 65 percent of the remaining United States population threatened by at least four major construction projects (see below) and the remaining 35 percent restricted to

small, isolated habitats vulnerable to a variety of imminent threats, the least Bell's vireo is becoming increasingly threatened by extinction.

B. Overutilization for commercial, recreational, scientific, or educational purposes. Not applicable.

C. Disease or predation. As with other song birds (passerines), the least Bell's vireo has always been subject to nest predation. Unlike many other passerines, however, least Bell's vireos typically build their nests within about 40 inches (1 meter) of the ground, where they are accessible to a variety of terrestrial predators that prey on eggs or young (Wilbur 1980a; Salata 1981, 1983a). Male vireos often sing while on the nest, thereby potentially increasing predation rates by attracting predators. With the introduction of house pets and feral cats and with the surrounding of remnant breeding habitats by encroaching urban development, abnormally high predator densities may occur. In such situations, vireos undoubtedly face greater predation pressure than in larger, more natural habitats.

Recent multi-year studies by Greaves and Gray (unpublished reports) and Salata (1981, 1983a) quantified predation rates at the Santa Ynez River and Santa Margarita River populations, respectively. They found that about 40 percent of all nesting attempts along the Santa Ynez River failed because of predation and that about 30 percent failed because of predation along the Santa Margarita River. Predation rates of approximately 25 percent were noted during 1984 along the San Diego, Sweetwater, and San Luis Rey Rivers (Jones 1985).

D. The inadequacy of existing regulatory mechanisms. The least Bell's vireo is protected by both State of California and Federal laws. It is also protected under the land management plans of some local jurisdictions (e.g., zoning, parks). The Migratory Bird Treaty Act (16 U.S.C. 701-711) establishes provisions regulating the taking, possessing, transporting, and import of migratory birds, including all Bell's vireos. The vireo has not been subjected to any commercial activities. However, its habitat is not protected under those laws and is being incrementally destroyed and degraded. The Endangered Species Act offers additional possibilities for protection and management of this species' habitat.

E. Other natural or manmade factors affecting its continued existence. The effect of nest parasitism by the brown-headed cowbird has been greatly enhanced by anthropogenic factors, resulting in increased cowbird habitat

and range and decreased vireo habitat. The brown-headed cowbird was rare in California prior to 1900, but expanded tremendously in both range and numbers (Garrett and Dunn 1981) as irrigated agriculture and animal husbandry increased (Wilbur 1980a). Cowbirds do not build their own nests but instead parasitize the nests of other bird species (i.e., lay their eggs in the nests of other species), usually to the detriment of the host birds' own eggs or young. The first record of nest parasitism on the least Bell's vireo was in 1907, after which reported incidences increased rapidly (Wilbur 1980a). The cowbird is not dependent upon the vireo, as it can use a large number of other species as host for its eggs. Vireo nests appear to be among the easiest to locate by cowbirds and may be favored, if present.

Recent studies by Greaves and Gray (unpublished reports) and Salata (1981, 1983a) have documented parasitism rates of between 20 and 47 percent from 1980 to 1982 along the Santa Ynez and Santa Margarita Rivers, respectively. Laymon (in litt.) suggests rates above 20% are probably detrimental to the vireo population's recruitment; at levels above 40% the local population may be expected to decline. Although the results of these studies do not indicate inordinately high parasitism rates compared to those of other common host species of brown-headed cowbirds, they do support the hypothesis that cowbird parasitism is significantly reducing least Bell's vireo reproductive success. During 1984 in a study of least Bell's vireo reproductive success along several rivers in San Diego County, Jones (1985) found a parasitism rate of 80 percent, a high rate that significantly affected vireo reproductive success.

Different rates would be expected at other breeding locales of least Bell's vireo, depending on an array of environmental factors. Considering the present widespread abundance of cowbirds throughout the historic range of the vireo, it appears that cowbird parasitism may greatly increase the probabilities of localized extinction to many of the small, vulnerable breeding populations. Further, depressed nesting productivity in the larger vireo breeding populations may: (1) Limit the opportunities (a) for population dispersal into unoccupied habitats or (b) to augment smaller populations and (2) may prevent founding pairs from successfully producing enough young to establish a new local population. An active cowbird control program by the Marine Corps on Camp Pendleton (Santa Margarita River), during April through July in 1983, is credited with

increasing the vireo productivity within the study area from 104 fledglings per 100 breeding adults in 1982 to 143 fledglings per 100 breeding adults in 1983 (Salata 1983b).

The widespread habitat losses described above have fragmented remaining breeding populations into small, disjunct, widely dispersed subpopulations. Of the 46 localities currently known to support breeding populations, 34 support 4 or fewer territorial males, and only 7 sites support more than 10 breeding pairs. The 5 largest remaining populations, the Sweetwater River (46 territorial males), Prado Basin-Santa Ana River (14 territorial males), Santa Margarita River (85 territorial males), Santa Ysabel Creek (16 territorial males), and Santa Ynez River (26 territorial males), represent about 65 percent of the extant population in the United States; each is imminently threatened by a major urban development or water control project planned in the near future. Many of the smaller subpopulations are similarly threatened by a variety of projects associated with the increasing human population throughout the range of the vireo.

Biogeographic theories suggest that these small, remnant populations (accounting for about 35 percent of the total population) are more vulnerable to extirpation than several larger populations. In short, the smaller and more isolated a given local population, the more likely its chances of extinction. Given the high mortality rates of all small migratory songbirds, the significant threat posed by brown-headed cowbird parasitism (see above), and the site tenacity of the subspecies, localized extinctions are a high probability, even without natural or human-caused destruction of local habitats. In many instances, there may be no other vireo populations close enough or there may not be sufficient population recruitment at other breeding areas to repopulate extirpated populations in later years. Also, if local habitats are decimated for a year or two (e.g., by flooding such as occurred in southern California in 1978 and 1980), there may be no nearby habitat available to which vireos can disperse until the scoured riparian habitat regenerates. In this case, vireos may be forced into habitats less suitable to their nesting and foraging requirements, resulting in heightened mortality and reduced reproductive success.

The Service has carefully assessed the best scientific information available regarding the past, present, and future threats faced by this species in

determining to make this rule final. Based on this evaluation, the preferred action is to list the least Bell's vireo as endangered. Its greatly reduced distribution and small population size, loss of habitat, and substantial potential for habitat modification or loss from future development projects, indicate the species warrants endangered rather than threatened status. The bird is clearly in danger of becoming extinct throughout its range in the foreseeable future. A decision to take no action would exclude the least Bell's vireo from needed protection available under the Endangered Species Act. Therefore, no action or listing as threatened would be contrary to the Act's intent. The reasons for postponing the designation of critical habitat are given in the following section. Designation of critical habitat will be addressed in a subsequent Federal Register notice. Elsewhere in this issue of the Federal Register the Service has reopened the comment period on the proposed critical habitat of May 3, 1985 (50 FR 18968).

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Section 4(b)(6)(C) further indicates that a concurrent critical habitat determination is not required if the Service finds that a prompt determination of endangered or threatened status is essential to the conservation of the involved species, or that critical habitat is not then determinable. The Service believes that a prompt determination of endangered status for the least Bell's vireo is essential. If the least Bell's vireo were only proposed, but not listed, it would be eligible only for the consideration given under the conference requirement of section 7(a)(4) of the Act, as amended. This does not require a limitation on the commitment of resources on the part of the concerned Federal agencies or applicants for Federal permits. Therefore, in order to ensure that the full benefits of Section 7 and other conservation measures under the Act will apply to the least Bell's vireo, prompt determination of endangered status is essential.

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service is in the process of evaluating the information on economic impacts of designating critical habitat that was submitted during the comment period. However, because of the complexities and extent of the

activities being assessed, the Service has not completed the evaluation. The Service today reopens the comment period on the critical habitat proposal in order to gather further data on economic impacts, boundaries, and precise habitat needs of the species in order to define more precisely the critical habitat of the vireo. The Service is in the process of performing the economic and other impact analyses required for a determination of critical habitat for the species, and plans to consider a final determination in the near future. The decision on designation of critical habitat must be made by May 3, 1987, pursuant to section 4(b)(6)(C)(ii) of the Act, as amended.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Critical habitat is not being designated for the vireo at this time.

A variety of Federal agencies have jurisdiction and responsibilities within vireo habitat, and Section 7 consultation might be required in a number of instances. At this point, known proposals that could require

consultation include: modification of Gibraltar Reservoir on the Santa Ynez River (Army Corps of Engineers (CE) and U.S. Forest Service), a flood control project on the Santa Ana River (CE), a flood control project (CE), highway construction projects (Federal Highway Administration), urban development in wetlands at the Sweetwater Reservoir (CE), and a water project on the Santa Margarita River (Bureau of Reclamation and U.S. Marine Corps). These and other projects have the potential for significant adverse effects on the least Bell's vireo.

The Bureau of Reclamation and U.S. Marine Corps have coordinated with the Service concerning possible projects that may be authorized for the Santa Margarita River at Camp Pendleton. An interagency agreement has been established to provide a mechanism leading to the timely implementation of a conservation strategy for native flora and wildlife species at Camp Pendleton and their habitats in the Santa Margarita floodplain and estuary. This agreement has identified the least Bell's vireo and other listed species as important public trust resources to be conserved.

Controlled burning by various government agencies to reduce fuel loads in uninhabited areas may benefit the vireo, if done at the right time and in the proper manner. The Forest Service may have to consult on some of their controlled burning programs in areas where vireos are present.

In the case of highway projects in southern California, those that may affect the vireo are major bridge crossings of riparian habitat. Many similar crossings already exist in vireo habitat that do not appear to be substantial adverse influences on the vireo, although this needs further study. Each such future project may become the subject of a consultation to see what, if any, effects are likely. Only projects with Federal approval or funding are possible candidates for such consultations.

This rule brings sections 5 and 6 of the Endangered Species Act into effect with respect to the least Bell's vireo. Section 5 authorizes the acquisition of lands for the purpose of conserving endangered and threatened species. Pursuant to section 6, the Fish and Wildlife Service would be able to grant funds (should they become available) to the State of California for management actions aiding the protection and recovery of the vireo.

Listing the least Bell's vireo as endangered allows for development of a recovery plan for this bird. Such a plan

will draw together the State, Federal, and local agencies having responsibility for conservation of the vireo. The recovery plan will outline an administrative framework, sanctioned by the Act, for agencies to coordinate activities and cooperate in their conservation efforts. Habitat Conservation Plans (HCPs) and other comprehensive plans, such as those being coordinated by the San Diego Association of Governments task force on the vireo, will be a part of and coordinated through the recovery plan process. The recovery plan will describe recovery priorities and estimate the cost of various tasks necessary to accomplish them. It will recommend appropriate functions to each agency and a time frame within which to complete them.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, etc.—see definitions at 50 CFR 17.3), import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

The least Bell's vireo is not used for economic purposes, is not a commercial species, and is not legally hunted, sold, or traded. Only a few requests for taking permits are anticipated. This bird is presently protected under 50 CFR Parts 10 and 20 as a migratory bird.

The Service will review the least Bell's vireo to determine whether it should be placed upon the Annex of the

Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, which is implemented through Section 8A(e) of the Act, and whether it should be considered for other appropriate international agreements.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244). The Service's determination includes and applies to critical habitat rules, none of which in the past have been found to be major Federal actions under NEPA.

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List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Regulation Promulgation

PART 17—[AMENDED]

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Amend § 17.11(h) by adding the following, in alphabetical order under Birds, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

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