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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB83

Endangered and Threatened Wildlife and Plants; Final Rule To Delist the Plant *Tumamoca Macdougallii*

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Fish and Wildlife Service (Service) removes *Tumamoca macdougallii* (Tumamoc globeberry) from the List of Endangered and Threatened Plants. The range of this species includes south-central Arizona and extends southward into southern Sonora, Mexico. Given the large range of the species, its non-specific habitat requirements, the number of known populations, the remote nature of much of the habitat, and the ability of the species to withstand some habitat degradation, the Service determines that the Tumamoc globeberry is not in danger of extinction throughout all or a significant portion of its range. This action removes the protection of the Endangered Species Act for the Tumamoc globeberry.

EFFECTIVE DATE: June 18, 1993.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Arizona Ecological Services Field Office, U.S. Fish and Wildlife Service, 3616 West Thomas Road, Suite 6, Phoenix, Arizona 85020.

FOR FURTHER INFORMATION CONTACT: Sue Rutman, at the above address (602/379-4720).

SUPPLEMENTARY INFORMATION:

Background

Tumamoca macdougallii was first collected on Tumamoc Hill, west of Tucson, Arizona, on July 31, 1908, by D.J. Macdougall, a scientist at the Carnegie Desert Laboratory. The specimen was sent to J.N. Rose, a botanist at the U.S. National Herbarium, who described it as a new genus and species in honor of the type locality and its collector (Rose 1912).

Tumamoca macdougallii is a delicate perennial vine in the gourd family

(Cucurbitaceae). The plants are found under trees or shrubs, which act as nurse plants and provide physical support for the vines. The stems arise from large tuber-like roots, begin annual growth during the late summer in response to summer rains, and continue growing until the onset of cool weather and short days in November. The thin leaves have three main lobes, each divided into narrow segments. The flowers are small and pale greenish-yellow, with both male and female flowers occurring on a plant. The majority of flowers are produced in August. Mature fruits are spherical to ovoid, succulent, and bright red (Reichenbacher 1985a, F.W. Reichenbacher and Associates 1990).

In 1986, when the species was listed as endangered under the Endangered Species Act of 1973, as amended (Act), thirty isolated populations of Tumamoc globeberry had been located in Pima County, Arizona and five were known from Sonora, Mexico. The total number of known individuals was 2,300 in the U.S. and 60 in Mexico (April 29, 1986; 51 FR 15906). All populations were found in the Arizona Upland Subdivision of Sonoran Desertscrub Biotic Community. The eastern and western limits of the U.S. range of the species were known to include the Tucson area and extended west about 193 kilometers (120 miles) to the vicinity of Organ Pipe Cactus National Monument. The exact northern and southern range boundaries were unknown but extended about 400 kilometers (250 miles) south of the U.S./Mexico border to the vicinity of Guaymas, Sonora.

Surveys and studies completed after the May 1985 publication of the proposed rule to list *Tumamoca macdougallii* have improved our understanding of the range and ecology of this species (Reichenbacher 1985a, Reichenbacher 1985b, Tierra Madre Consultants and Cornett & Associates 1985, Reichenbacher 1987, Biosystems Analysis 1988). Numerous surveys have been conducted on smaller tracts of land. The locations of most populations are contained in the Non-game Data Management System of the Arizona Game and Fish Department.

A survey and study in the U.S. and Mexico contracted by the Bureau of Reclamation greatly increased our understanding of *Tumamoca macdougallii* (F.W. Reichenbacher and Associates 1990). The study was required by a June 30, 1986, jeopardy biological opinion under Section 7 of the Act on the Central Arizona Project (pipeline and canal) and was conducted during the summers of 1988 and 1989.

The report summarized the current range, distribution, and ecological information on *Tumamoca*.

The U.S./Mexico survey extended the northern and southern boundaries of the known range of *Tumamoca* (F.W. Reichenbacher and Associates 1990), although the eastern and western boundaries were essentially unchanged. The southern boundary, while not yet fully defined, was extended south to within 80 kilometers (50 miles) of the northern border of Sinaloa, Mexico. The northern boundary was extended to include southern Pinal and Maricopa Counties, Arizona. The distance between the northern and southern boundaries is more than 643 kilometers (400 miles). F.W. Reichenbacher and Associates (1990) estimated the potential habitat of *Tumamoca* in the U.S. and Mexico to be 72,862 square kilometers (27,959 square miles).

Tumamoca is less habitat-specific than was believed at the time it was listed. The species occurs below 914 meters (3,000 feet) elevation in a variety of desert habitats and vegetation types, including the Arizona Upland, Lower Colorado Valley, Plains of Sonora, and Central Gulf Coast Subdivisions of the Sonoran Desertscrub Biotic Community and the Sinaloan Thornscrub Eiotic Community (F.W. Reichenbacher and Associates 1990) (biotic communities defined by Turner and Brown 1982). The species is found associated with a variety of nurse plants and in soil types ranging from sandy soils of valley bottoms to rocky soils of upper bajada slopes (F.W. Reichenbacher and Associates 1990). In the U.S., *Tumamoca* occurs in isolated, discrete populations separated by large areas of apparently suitable but unoccupied habitat (Reichenbacher 1985a, F.W. Reichenbacher and Associates 1990). In Mexico, the species is widely scattered at a relatively low frequency throughout suitable habitat, with some areas of higher densities (F.W. Reichenbacher and Associates 1990). Depending on the site, habitat condition ranges from excellent or good to severely degraded or modified.

Surveys of potential habitat in the U.S. and Mexico showed the species to be more common than known at the time it was listed. Less than one percent of the potential habitat in the U.S. and Mexico was searched in 1988 and 1,242 plants were located (F.W. Reichenbacher and Associates 1990). This search involved 444 quadrats in Sonora and 261 in Arizona. All quadrats were approximately 8 hectare (20 acre) rectangles. *Tumamoca* was found in 6 Arizona quadrats (2 percent) and 89 Sonora quadrats (20 percent). The new

Tumamoca localities in Mexico were scattered fairly evenly throughout a 52,600 square kilometer (20,300 square mile) region. A statistically reliable extrapolation of the U.S./Mexico survey data can not be made due to sampling constraints; however, many more plants and populations almost certainly exist.

Most of the habitat of *Tumamoca* is remote desert, where few threats exist or are expected to occur. In more densely human populated areas of *Tumamoca*'s range, habitat is being lost to urban and agricultural development, habitat conversion to livestock pasture, and off-road vehicle traffic. F.W. Reichenbacher and Associates (1990) estimates that only 2-3 percent of *Tumamoca* habitat has been lost to agriculture and urban expansion. This estimate does not include desert scrub in Mexico converted to livestock pasture. A substantial number of quadrats in Mexico had to be relocated from their originally intended sites because of unmapped, presumably recently developed, livestock pasture. Habitat degradation is occurring due to erosion from a variety of sources, including historic and present livestock overgrazing, cross-desert dikes, and roads. Nevertheless, the large range of *Tumamoca* and the extreme remoteness of much of the habitat in both the U.S. and Mexico strongly suggest that significant portions of the range are secure for the foreseeable future.

Javelina (*Dicotyles tajacu*) dig up the moisture-rich tuber-like roots and are an important source of *Tumamoca* mortality. Although this consumption may produce local population declines, it is unlikely javelina can seriously impact a species with such a broad range and widely scattered populations.

Federal government actions on this species began on December 15, 1980, when the Service published in the *Federal Register* (45 FR 82480) a notice of review covering plants being considered for classification as endangered or threatened. In that notice, *Tumamoca macdougallii* was included as a Category 1 candidate species. Category 1 candidates are those for which the Service presently has sufficient information on biological vulnerability and threats to support proposals to list them as threatened or endangered species.

Section 2(b)(1) of the 1982 amendments requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. Because the species included in the December 15, 1980, notice of review were considered under petition, all the taxa contained in the notice, including *Tumamoca macdougallii*, were treated as

being newly petitioned on October 13, 1982.

Section 4(b)(3)(B) of the Act requires the Secretary to make certain findings on petitions within 12 months of their receipt. In 1983 and 1984, the Service found that the listing of *Tumamoca macdougallii* was warranted but precluded by other listing actions of higher priority and that additional data on vulnerability and threats were still being gathered. A proposed rule to list *Tumamoca macdougallii* as endangered, published on May 20, 1985 (50 FR 20806), found that the petitioned action was warranted in accordance with section 4(b)(3)(B)(ii) of the Act. The final rule listing *Tumamoca macdougallii* as endangered was published in the *Federal Register* on April 29, 1986 (51 FR 15906). Critical habitat was not designated.

Federal involvement with *Tumamoca* subsequent to listing has included population surveys, life history and biological studies, a transplanting project, and monitoring. These projects mostly resulted from Federal activities requiring either informal or formal consultation with the Service under section 7 of the Act. Bureau of Reclamation (BR) construction of the Central Arizona Project, Tucson Aqueduct, Phase B, has been the most significant Federal activity involving *Tumamoca*. To comply with reasonable and prudent alternatives of a jeopardy biological opinion for this project issued by the Service June 30, 1986, BR purchased a 32-hectare (80-acre) preserve for *Tumamoca*, transplanted plants in the path of aqueduct into the preserve, and monitored the success of the transplants for five years (Reichenbacher and Perrill 1991). After initial high mortality in the transplanted population, the rate of mature plant deaths declined to a number similar to the control population. Additionally, recruitment is occurring in the transplanted population and a prediction matrix analysis indicates the population should continue to rebound through the year 2000 when it will be 125 percent of the original 403 transplanted plants (Reichenbacher and Perrill 1991).

Surveys for *Tumamoca*, most often to comply with section 7 requirements, have been conducted throughout the predicted range of the species in the U.S. and Mexico. These surveys have shown *Tumamoca* to be more common and much more evenly distributed across its range than previously believed.

Summary of Comments and Recommendations

In the August 21, 1992, proposed rule (57 FR 37941) 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 *Tucson Citizen* and *Arizona Daily Star* on September 4, 1992, which invited general public comment. Four comments were received and are discussed below. No public hearing was requested.

Comments on the proposal were received from the Arizona Game and Fish Department, the Arizona State Office of the BLM, the Papago Agency of the Bureau of Indian Affairs, and Dr. Dennis M. Kearns, Missouri Botanical Garden, an expert on the genus *Tumamoca*. The BLM indicated it will continue to treat *Tumamoca macdougallii* as a sensitive species, effective on the date of delisting, and would continue monitoring the species' demographic characteristics and other factors in the Safford and Phoenix Districts. Dr. Kearns noted that *Tumamoca macdougallii* is no longer a monotypic genus. A new species of *Tumamoca* has been discovered from Zacatecas, Mexico. The Service incorporated this information in the "Background" section of this final rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Tumamoca macdougallii* should be removed from the List of Threatened and Endangered Plants (50 CFR 17.12). Procedures found at Section 4(a)(1) of the Act and promulgating regulations (50 CFR Part 424) to implement the listing provisions of the Act were followed. The Service's listing regulations provide for a review of the following five factors when delisting a species (50 CFR 424.11). These factors and their application to *Tumamoca macdougallii* are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* *Tumamoca* populations are scattered throughout an estimated 72,862 square kilometers (27,959 square miles) of habitat in five different vegetation types. As might be expected, some habitat loss and degradation is occurring within this

area. However, F.W. Reichenbacher and Associates (1990) estimated less than three percent of *Tumamoca* habitat has been lost to agriculture and urban expansion. These losses tend to be concentrated along major watercourses or drainages, and urban centers such as Hermosillo, Sonora, and Tucson, Arizona.

Habitat loss from the Central Arizona Project was mitigated by the purchase and fencing of preserves and the transplanting and monitoring of plants that would have been lost to canal construction. The transplanting effort and subsequent monitoring have yielded valuable information on *Tumamoca* biology.

The Service has no information to indicate that *Tumamoca* is negatively affected when habitat is destabilized and erosion is accelerated. In fact, *Tumamoca* populations exist and are apparently stable in the Avra and Vekol Valleys (C. Button, Bureau of Land Management, pers. comm. 1991), where habitat conditions are poor and erosion is a serious problem.

Some areas in southern Arizona and Sonora are being converted from desert scrub to monotypic stands of buffelgrass (*Cenchrus ciliaris*) to provide livestock forage. Buffelgrass outcompetes native plant species, including *Tumamoca*. Conversely, natural grassy areas, especially savanna grasslands in central Sonora, have been denuded and replaced by desert scrub that may actually provide better habitat for *Tumamoca* than do grasslands (F.W. Reichenbacher and Associates 1990). This pattern of shrub encroachment due to overgrazing and conversion of desert scrub to pasture is expected to continue. Despite this habitat alteration, the future of *Tumamoca* should be secure in the large areas of undisturbed habitat that remain.

Recreation, which occurs mostly near large urban areas, has probably caused a small amount of habitat loss or degradation, mostly due to off-road vehicle use. A popular picnic area on the Coronado National Forest contains a population of *Tumamoca macdougallii*. Despite the heavy recreational use of this area, the population appears to be stable (Reichenbacher 1989).

B. Overutilization for commercial, recreational, scientific, or educational purposes. The final rule to list this species identified scientific collection as a potentially significant threat due to the rarity of the species and the small size of many populations. *Tumamoca* is now more common than previously believed, and the amount of damage that could be caused to the species from possible scientific collecting is,

therefore, proportionally less. No significant commercial, recreational, scientific, or educational overuse of this species is known to have occurred.

C. Disease or predation. Javelina uproot the *Tumamoca* tuber-like roots to eat the succulent tissues, which sometimes kills the plant or reduces its vigor or reproductive output. Significant damage is also done by lagomorphs and/or rodents. Many plants are found with their stems clipped at or above ground level. This is likely seldom fatal, but undoubtedly affects the ability of the plant to store photosynthate and moisture for the next growing season (Reichenbacher 1985a). These predators are all native species and *Tumamoca* has undoubtedly evolved to cope with the level of damage inflicted. Perhaps the scattered occurrences and absence of plants in apparently suitable habitat is, in part, a response to pressure from predators. Nonetheless, disease or predation are not considered a significant threat to the species at the population level.

D. The inadequacy of existing regulatory mechanisms. *Tumamoca macdougallii* currently receives the protection of the Arizona Native Plant Law and the Endangered Species Act. It is considered a sensitive species by the Forest Service and the BLM, a provision which offers some management protection. If *Tumamoca macdougallii* is removed from the Endangered Species List, the Forest Service and BLM have indicated the species will remain on their sensitive species lists. In addition, pursuant to section 4(g) of the Act, the Service is required to monitor delisted species for at least five years to ensure that any remaining threats or downward population trends will be detected.

E. Other natural or manmade factors affecting its continued existence. When *Tumamoca* was listed, low numbers and limited range were thought to make it vulnerable to natural stresses such as prolonged drought. With our present knowledge of distribution and abundance it seems doubtful any natural stresses would affect *Tumamoca* in more than a portion of its range.

The regulations at 50 CFR 424.11(d) state that a species may be delisted if (1) it becomes extinct, (2) it recovers, or (3) the original classification data were in error. The Service believes that the data supporting the original classification were incomplete. After conducting a review of the status of the species, the Service concludes that the best scientific and commercial data available at present show that removing *Tumamoca macdougallii* from the List of Endangered and Threatened Plants is warranted.

The Service has determined that the species is not in danger of extinction throughout all or a significant portion of its range, nor is it likely to become an endangered or threatened species within the foreseeable future throughout all or significant portion of its range. Given its large range, the number of known populations, the remote habitat, ability to withstand some habitat degradation, and non-specific habitat needs, the Service has determined that the *Tumamoc* globeberry does not warrant the protection of the Act.

In accordance with 5 U.S.C. 553(d), the Service has determined that this rule relieves an existing restriction and good cause exists to make the effective date of this rule immediate. Delay in implementation of this delisting would cost government agencies staff time and monies on conducting formal section 7 consultation on actions which may affect a species no longer in need of the protection under the Act. Relieving the existing restriction associated with this listed species, will enable Federal agencies to minimize any further delays in project planning and implementation for actions that may affect the *Tumamoc* globeberry.

Effect of Delisting

This action results in the removal of this species from the List of Endangered and Threatened Plants. Federal agencies will no longer be required to consult with the Service to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of *Tumamoca macdougallii*. Federal prohibitions under section 9 of the Act will no longer apply.

To fulfill the requirements to monitor the species for five years following delisting, a Service contractor will visit sites with known *Tumamoc* globeberry populations throughout the U.S. and Mexico. At each site, the contractor will note whether or not the population is still extant, take photographs of the surrounding landscape, and note whether or not any significant land use changes have occurred in the area during the monitoring period. The sites will be chosen to represent a variety of habitat types and be spread across the range of the species. A form for use by field workers will be prepared by the contractor, in cooperation with the Service. Visits will occur during years one, three, and five, of the monitoring period, with progress reports developed and provided to the Service upon completion of each field season.

The BLM has established permanent plots to monitor *Tumamoc* globeberry and is committed to continuing this

monitoring effort during the five-year post-delisting period. These plots are located on BLM-managed lands in the Avra and Vekol Valleys. The Coronado National Forest will continue to collect demographic data for the population in the Santa Catalina Mountains, which is the only population on National Forest lands.

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).

References Cited

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Author

The primary author of this final rule is Sue Rutman (See **ADDRESSES**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

PART 17—[AMENDED]

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

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Public Law 99-625, 100 Stat. 3500; unless otherwise noted.

2. Section 17.12(h) is amended by removing the entry "*Tumamoca maddougali*" under CUCURBITACEAE from the List of Endangered and Threatened Plants.

Dated: May 24, 1993.

Bruce Blanchard,

Acting Director, Fish and Wildlife Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 204 and 282

[Docket No. 930639-3139; I.D. 042893A]

RIN 0648-AE18

South Pacific Tuna Fisheries

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Interim final rule; request for comments.

SUMMARY: NMFS issues interim regulations to implement the Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America (Treaty) and the South Pacific Tuna Act of 1988 (Act).

On May 13, 1992, the Annexes to the Treaty were amended and extended for 10 years. This interim final rule implements the new licensing fee

structure, places restrictions on the transshipment of tunas, changes vessel identification requirements, implements new requirements for reporting to the South Pacific Forum Fisheries Agency (FFA), and makes other revisions to the existing regulations implementing provisions required by the amended Treaty. This rule also eliminates NMFS' role as administrator of the industry fees required under the Treaty and terminates the license allocation system, which allocated licenses in the event that the number of applications received were greater than the number of available licenses.

DATES: This interim final rule is effective June 14, 1993. Comments are invited and will be accepted if received before August 13, 1993.

ADDRESSES: Comments, requests for license applications, copies of the Treaty and amended annexes, and further information should be addressed to Dr. Gary Matlock, Acting Director, Southwest Region, NMFS, 501 W. Ocean Blvd., suite 4200, Long Beach, CA 90802-4213.

FOR FURTHER INFORMATION CONTACT: Mr. Svein Fougner, NMFS, (310) 980-4034.

SUPPLEMENTARY INFORMATION: NMFS issues interim regulations to implement the Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America (Treaty) and the South Pacific Tuna Act of 1988 (Act). The Act authorizes the Secretary of Commerce (Secretary) to issue regulations as may be necessary to carry out the purposes and objectives of the Treaty. Under the original 5-year Treaty, all U.S. fishing vessels, except those using trolling gear to fish for albacore tuna outside of the 200-nautical mile fisheries zones of the Pacific Island States, are required to obtain licenses from the South Pacific Forum Fisheries Agency (FFA) to fish for tuna in an area of the South Pacific Ocean, known as the Licensing Area, which is approximately 26 million km² (10 million square miles).

The South Pacific Tuna Treaty was amended and extended in May 1992, to ensure access for U.S. tuna purse seine vessels to fishing grounds in the South Pacific Ocean for at least 10 more years. Among the amendments going into effect June 15, 1993, are a new license fee structure, new reporting requirements, and new vessel and gear identification requirements with which license holders must comply. It is crucial to have interim regulations in place by June 15, 1993, to implement the new Treaty requirements.