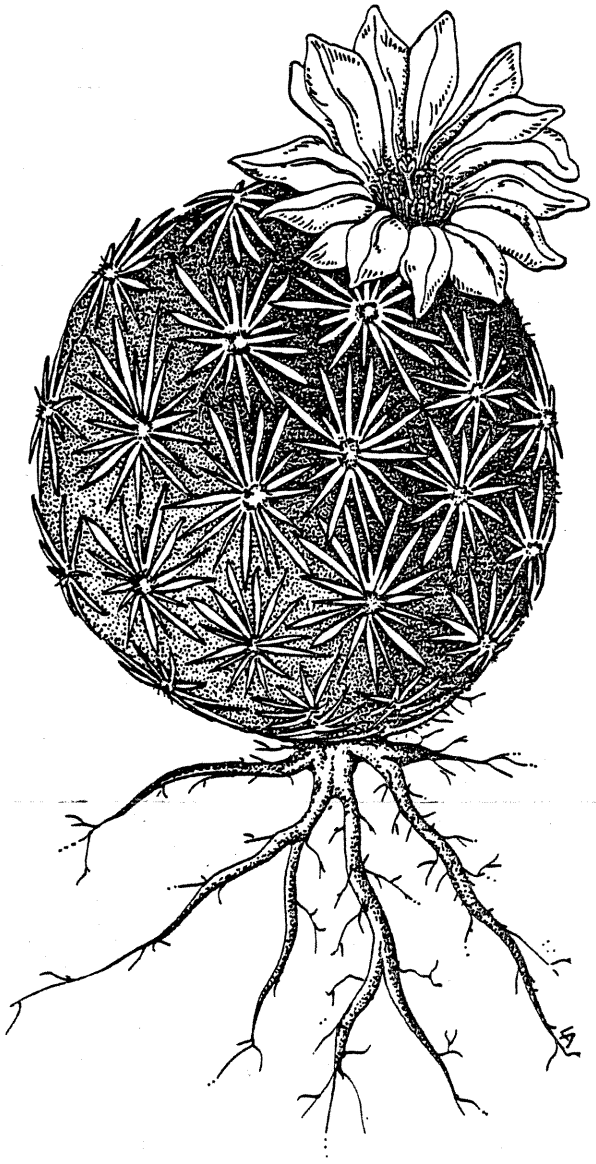
NELLIE CORY CACTUS
(Coryphantha minima)
RECOVERY PLAN



U.S. Fish and Wildlife Service

Albuquerque, New Mexico

1984

RECOVERY PLAN FOR THE NELLIE CORY CACTUS

CORYPHANTHA MINIMA BAIRD

Prepared by:

Kenneth D. Heil
Math-Science Department
San Juan College
Farmington, New Mexico 87401

for

U.S. Fish and Wildlife Service, Region 2

APPROVED: _____
Regional Director, Region 2
U.S. Fish and Wildlife Service

DATE: 9/20/84

SUMMARY

Goal:	To remove the Nellie cory cactus from the Federal list of endangered and threatened species by managing the essential habitat to sustain natural populations in the wild.
Recovery Criteria:	The criteria for downlisting and/or delisting the Nellie cory cactus have not as yet been determined. Implementing studies in this recovery plan will provide the necessary data from which quantification of downlisting and/or delisting criteria can be established.
Actions needed:	Major steps needed to meet the recovery criteria include: developing a cooperative agreement with private landowners for the protection and management of the Nellie cory cactus population; initiating and supporting studies on the population biology and ecology of the Nellie cory cactus; and developing a comprehensive trade management plan for all cacti.

DISCLAIMER

This is the completed Nellie Cory Cactus Recovery Plan. It has been approved by the U.S. Fish and Wildlife Service. It does not necessarily represent official positions or approvals of cooperating agencies and it does not necessarily represent the views of all individuals who played a key role in preparing this plan. This plan is subject to modification as dictated by new findings and changes in species status and completion of tasks described in the plan. Goals and objectives will be attained and funds expended contingent upon appropriations, priorities, and other budgetary constraints.

Literature citation should read as follows:

U.S. Fish and Wildlife Service. 1984. Nellie Cory Cactus Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, NM 34 pp.

Additional copies may be obtained from:

U.S. Fish and Wildlife Reference Service
1776 E. Jefferson Street
4th Floor
Rockville, Maryland 20852
Phone: (301) 468-1737 Ext. 326 or 290
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PART I

INTRODUCTION

The Nellie cory cactus, Coryphantha minima Baird, was listed as endangered on November 7, 1979 (44 FR 64740). One other member of this genus is recognized as endangered--C. sneedii (Britton and Rose) Berger var. sneedii, and two members of this genus are recognized as threatened--C. sneedii (Britton and Rose) Berger var. leeii (Rose) L. Benson and C. ramillosa Cutak. The 1980 Notice of Review (45 FR 82480) and its 1983 Supplement (48 FR 53640) specify eight species from this genus as taxa currently under review.

In addition to being listed by the Federal government, Nellie cory cactus is also listed by the State of Texas as endangered.

Taxonomy

Coryphantha minima Baird was first collected by A.R. Davis in 1931 near Marathon, Texas (Benson, 1982). It was originally described in 1931 by Ralph O. Baird in the American Botanist (Baird, 1931). Baird's description was complete, except for a Latin description. In 1934, Croizat described the same plant as C. nellieae, apparently unaware that this cactus had been described 3 years earlier (Croizat, 1934). Backeberg transferred the species to Escobaria nellieae (Backeberg, 1961) and Weniger refers to it as Mammillaria nellieae (Weniger, 1970).

Morphology

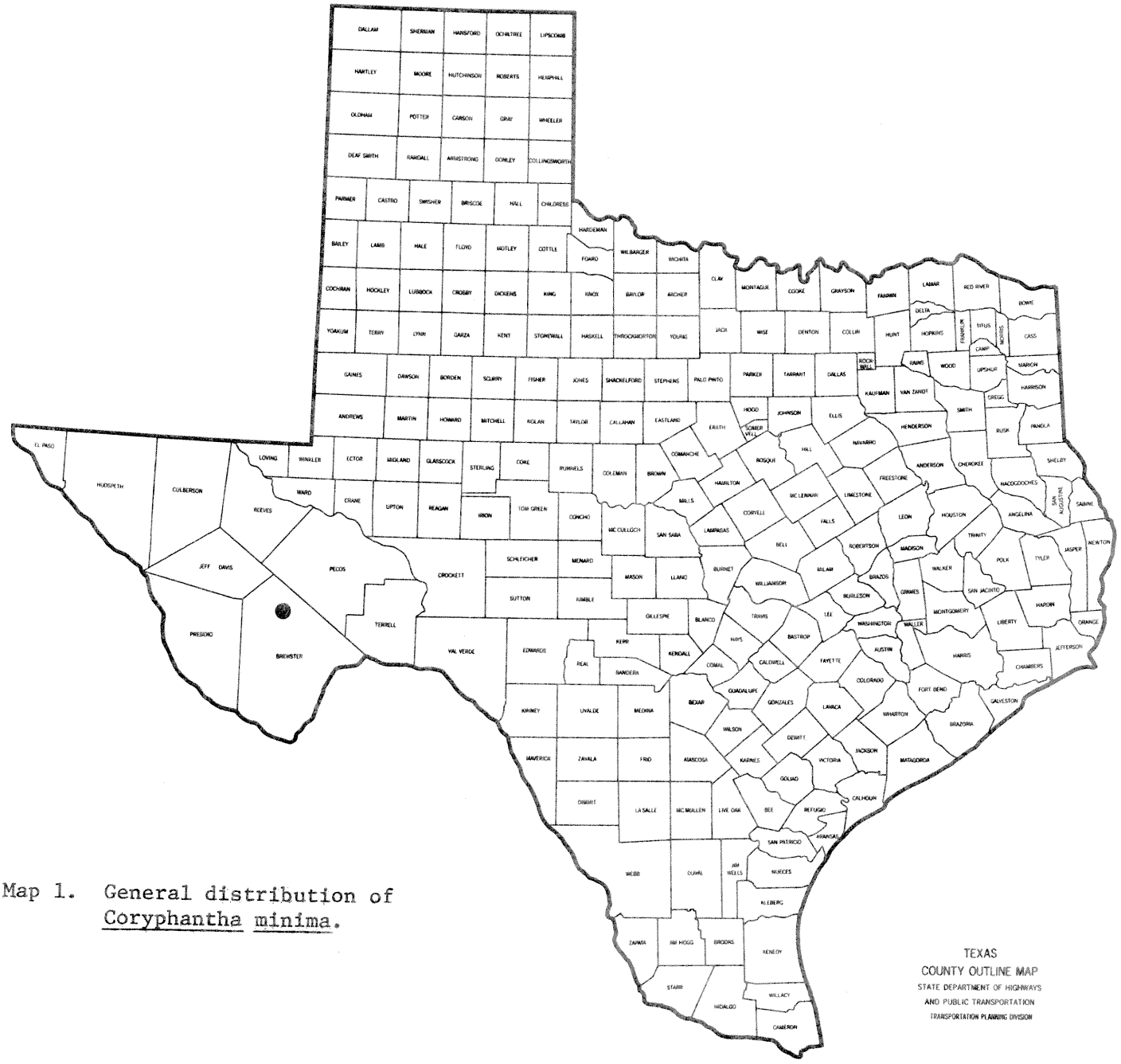
Plants simple or branching, ovoid, 1.2-2.5 cm long, 1.2 cm in diameter; tubercles subcylindroid, 1.5-2.3 mm vertically, 1.5-2.3 mm broad, protruding 3 mm; areoles somewhat woolly; spines dense, about 20 per areole, ashy gray or pinkish, in 2 or 3 series, those of the inner series longer and thicker especially in the upper part of the areole, up to 4.5 mm long, bulbous basally, cylindroidal with an abruptly acute apex, circular in cross section (Benson, 1970); flowers rose-purple, about 2 cm tall and up to 2.5 cm in diameter; filaments green; anthers pale orange; fruit ovoid, green, up to 7 mm long; seed about 0.5 mm long, black.

Distribution

The Nellie cory cactus grows in the Chihuahuan Desert near Marathon in northern Brewster County, Texas (Map 1). Two populations grow on the Caballos Novaculite Formation ridges that run in a northeast to southwest direction.

Land Ownership

The entire population of Nellie cory cactus is on land that is privately owned by two individuals.



Map 1. General distribution of Coryphantha minima.

Habitat

Coryphantha minima grows in desert grassland (Brown, 1982) and is restricted to the Caballos Novaculite Formation. This quartz formation forms low-lying ridges that are highly resistant to erosion, and support perennial bunch grasses and a wide variety of shrubs and cacti. This formation provides a favorable habitat for a number of endemic species, including C. minima. The Nellie cory cactus is usually found growing among the chips of weathered and physically fractured novaculite, often in association with a spikemoss (Selaginella sp.). The cactus' edaphic requirements are poorly understood. There is a need to determine these requirements to understand factors restricting its distribution, since it is only found on two novaculite ridges. The Nellie cory cactus grows at an elevation of 1,200-1,350 m. The average annual precipitation is approximately 41.0 cm.

Population Biology

A. Demography

1. Population number: The total population of C. minima is approximately 40,000 to 80,000 plants over its total known range.

2. General demographic details:

(a) Area of the population: 11 km x 50 m.

(b) Density: The density of the Nellie cory cactus varies widely. There may be up to several hundred plants in one square meter while a nearby square meter may not support a single plant. This species has a clumped and very uneven distribution within its range.

(c) Presence of dispersed seeds: The fruit matures and dehisces in late May and early June. Seeds were found at all mature plants visited that were healthy and flowering (see phenology, page 6.)

(d) Evidence of reproduction: Seedlings were observed throughout the population. The success rate for seedlings is unknown; but it is apparently fair to good because where environmental conditions appear right, there are high numbers of plants.

(e) Evidence of population expansion or decline: The Nellie cory cactus population appears to be stable, but more information is needed on the plant's edaphic requirements and demography. There has been some collecting

of C. minima in the past, but the overall effect on the native population is unknown. Three monitoring stations should be set up and checked at least twice a year to determine approximately how much collecting is being done. Given the species' limited distribution, a commercial collector over a period of time could have a significant effect in depleting the population.

(f) Age of plants before reproduction: Most C. minima begin to bloom after 3 to 4 years.

B. Phenology

1. Budding time: April

2. Flowering time: May; individual flowers last 2 to 3 days.

3. Fruit formation: June; virtually 100% of adults in cultivation set fruit after flowering; natural rates are not known.

4. Fruit dehiscence: The ovary walls do not break down, and it may take a heavy rain to dislodge the fruits and wash the seeds out of the plants (Steve Brack, pers. comm. 1983).

5. Seeds: After the seeds fall to the base of the parent plant running water carries them away where some fall between the chips of novaculite. Each C. minima fruit produces approximately 80 to 100 seeds, or approximately 300 to 400 seeds per plant. No dormancy has been observed in the seeds of this species. The seeds germinate immediately and may stay viable for approximately 5 to 10 years depending on weathering (Steve Brack, pers. comm. 1983). Seedlings tend to have a high survival rate in the cracks of the novaculite, and there is a high density of plants where the rock is exposed. In the cracks of the novaculite, the Nellie cory cacti line up like soldiers (Steve Brack, pers. comm. 1983).

C. Associated Species

The Caballos Novaculite Formation supports a scanty vegetation consisting of low shrubs, some rosetophyllous perennials, a few other species of cacti, and both annual and perennial herbs. Associated species include:

Prosopis glandulosa

Acacia constricta

A. rigidula

Berberis trifoliolata

Bouteloua breviseta

Erioneuron pulchellum

Yucca elata

Y. torreyi

Leucophyllum frutescens

Dasylirion leiophyllum

Larrea tridentata

Artemisia sp.

Ephedra nevadensis

Juniperus pinchotii

Nolina texana

Opuntia violacea

Echinocereus stramineus

E. viridiflorus
var. davisii

E. viridiflorus
var. correllii

Coryphantha varicolor

C. hesteri

Thelocactus bicolor
var. flavidispinus

Zinnia pumila

Mammillaria gummifera

Erigeron sp.

Castilleja sessiliflora

C. integra

Verbena sp.

Hymenoxys scaposa

Dyssodia pentachaeta

Calylophus sp.

Cheilanthes villosa

Condalia ericoides

Koeberlinia spinosa

Asclepias nummularia

Penstemon fendleri

Aloysia wrightii

Selaginella sp.

D. Insect Vectors

The major pollinator(s) of C. minima is unknown.

Impacts and Threats

The present range of the Nellie cory cactus and its historic range are believed to be the same. Threats are principally of three types: (A) direct collection of plants by commercial or private collectors; (B) destruction or modification of its habitat by livestock; and (C) natural threats. The following are existing or potential threats:

A. Commercial and Private Collectors

Overcollecting for commercial and noncommerical purposes is the major threat to the Nellie cory cactus. For those collectors that specialize in rare cacti, this species is a "must". Many European, Japanese, and American cactus fanciers know the Nellie cory cactus' exact locality. The site was heavily collected by California nursery people about 20 years ago (Steve Brack, pers. comm. 1983). With renewed interest in rare cacti, commercial dealers could heavily collect again in the future. One factor that the Nellie cory cactus has in its favor is its diminutive size. Being dwarf and often below ground level, it is very difficult to find. The Nellie cory cactus is easy to raise from seed and grow in cultivation.

The impact that collecting has had on C. minima, the extent of current collecting, and if seed collecting is taking place is unknown. Therefore, it is imperative to try to determine how much collecting is being done and to try to curtail it.

B. Destruction or Modification of Habitat by Livestock

Domestic livestock grazing may on rare occasion cause damage to C. minima through trampling. However, the novaculite ridges contain little vegetation for grazing and the novaculite chips are quite sharp. All livestock observed were grazing on the flats below the novaculite ridges. Occasionally, some livestock in search of food may wander onto a novaculite ridge, although no evidence of this was found. Trampling should not be considered a major threat.

C. Natural Threats

1. Interspecific competition: There are many species of plants that grow on the Caballos Novaculite Formation. Competition for space, water, nutrients, etc. may restrict the Nellie cory cactus.

2. Restriction to a narrow edaphic situation: In addition to being restricted to the Caballos Novaculite Formation, the Nellie cory cactus grows on only a portion of that formation. Although many novaculite ridges have been searched, only two have been found to support the Nelly cory cactus.

PART II

RECOVERY

The primary objective of this recovery plan is to remove the Nellie Cory cactus from the Federal list of endangered and threatened species by managing the essential habitat so that healthy populations can be sustained naturally. The criteria for downlisting and/or delisting the Nellie Cory cactus have not as yet been determined. Implementing studies in this recovery plan will provide the necessary data from which quantification of downlisting and/or delisting criteria can be established.

Research and monitoring of the population is required to provide a greater knowledge of the population biology of this cactus. In turn, these data can be used to suggest better management techniques. Management efforts will involve cooperation of private landowners because the entire known population of Nellie cory cactus occurs on privately owned land. In addition, artificial propagation may also prove to be a feasible measure for removing some of the collecting pressure on the wild population.

Step-down Outline

1. Remove threats to Coryphantha minima by enforcement of existing regulations for protection.
   11. Enforce existing trade regulations under the Endangered Species Act of 1973 (ESA), Convention on International Trade in Endangered Species (CITES), and the Lacey Act.
   12. Determine the extent of collecting impacts on the Nellie cory cactus.

121. Develop a monitoring system.

122. Develop a study to determine the extent and number of *C. minima* in commercial trade.

2. Maintain and enhance existing populations by obtaining management rights for *C. minima* through a cooperative agreement with private landowners or through the protection of occupied suitable habitat.

21. Develop a cooperative agreement with private landowners for the protection and management of *C. minima* populations.

22. Develop and implement habitat management plans for all existing *C. minima* habitat.

23. Protect occupied suitable habitat presently in private ownership.

3. Initiate and support studies on the population biology and ecology of the Nellie cory cactus.

31. Determine all mechanisms involved in seed dispersal.

32. Determine what microhabitat factors are involved in seedling establishment ecology.

33. Determine the germination percentage rate of seeds and the taxon's overall reproductive potential and actual success in its natural habitat.

34. Determine vectors involved in the pollination of *C. minima*.

35. Systematically survey for new populations on other outcrops of the Caballos Novaculite Formation in the region.

4. Develop a comprehensive, trade management plan for all cacti.

   41. Develop a trade study.

   42. Develop a monitoring study to determine the impact of collecting.

   43. Determine the feasibility of reducing the collecting pressure on the wild populations by promoting a commercial, artifical propagation program.

   44. Establish official FWS policy on the cactus trade problem.

5. Develop public awareness, appreciation, and support for the preservation of the Nellie cory cactus.

Narrative

1. Remove threats to Coryphantha minima by enforcement of existing regulations for protection.

Because of the rarity of the Nellie cory cactus, the population should be protected by the enforcement of existing international, Federal, and State regulations including management of the threats to the species.

11. Enforce existing trade regulations under the Endanged Species Act of 1973 (ESA), Convention on International Trade in Endangered Species (CITES), and the Lacey Act.

Any individual in violation of ESA, CITES, or the Lacey Act regarding the Nellie cory cactus should be prosecuted as a deterrent to others, and the judgement should be published in periodicals such as the Cactus and Succulent Journal of America.

12. Determine the extent of collecting impacts on the Nellie cory cactus.

The amount of collecting being done needs to be determined and the collecting curtailed. (See Task 4)

121. Develop a monitoring system.

To determine the number of individuals at selected sites and quantify the loss of individuals as a direct result of collecting, a monitoring system needs to be established.

122. Develop a study to determine the extent and number of C. minima in commercial trade.

This study would probably be part of a major study concerning all cacti in the trade. The study would involve the monitoring of journals and nursery catalogs, interviews with dealers, and undercover work.

2. Maintain and enhance existing populations by obtaining management rights for C. minima through a cooperative agreement with private landowners or through the protection of occupied suitable habitat.

21. Develop a cooperative agreement with private landowners for the protection and management of C. minima populations.

Without the support of the two private landowners recovery of the Nellie cory cactus will be impossible. To provide for the maintenance of C. minima populations on these privately owned lands, it will be necessary to obtain the cooperation and good will of the private landowners. Once a working relationship is established, cooperative management agreements should be negotiated to acquire protection for the Nellie cory cactus and its habitat. If possible, such cooperation should allow management to improve and enhance existing sites.

22. Develop and implement habitat management plans for all existing C. minima habitat.

As agreements with private landowners are reached, habitat management plans should be prepared for all Nellie cory cactus habitats. These plans should establish goals and objectives for management of the habitats.

23. Protect occupied suitable habitat presently in private ownership.

All land inhabited by C. minima populations is in private ownership. Habitat on private lands lacks the protection afforded on public lands. Therefore, actions allowing direct habitat protection should be considered.

3. Initiate and support studies on the population biology and ecology of the Nellie cory cactus.

Due to the rarity of the Nellie cory cactus, the two known populations must be sustained in a healthy and vigorous state. An indepth knowledge of the plant's population biology and ecology is needed to understand its habitat requirements. Growth requirements and limiting factors need to be studied in detail. The knowledge gained can be used to help sustain and manage the natural populations.

31. Determine all mechanisms involved in seed dispersal.

It is felt that running water is the major factor in the dispersal of the Nellie cory cactus seeds. A study needs to be done to determine whether birds or rodents play a significant role in seed dispersal of this cactus.

32. Determine what microhabitat factors are involved in seedling establishment ecology.

Most Nellie cory cactus seeds germinate in the chips or cracks of the novaculite. Some seeds may germinate in the Selaginella. A thorough study of the edaphic factors in relation to seedling ecology is needed.

33. Determine the germination percentage rate of seeds and the taxon's overall reproductive potential and actual success in its natural habitat.

In its natural habitat, the percentage of Nellie cory cactus seeds that germinate is unknown. Also, the number of seeds that grow to maturity from seeds that do germinate is unknown. A study is needed on germination and mortality rates of the Nellie cory cactus seeds and seedlings.

34. Determine vectors involved in the pollination of C. minima.

The major pollinator of C. minima is unknown. A study needs to be done to determine the major pollinator(s) of this cactus.

35. Systematically survey for new populations on other outcrops of the Caballos Novaculite Formation in the region.

There are several ridges of Caballos Novaculite that contain potential habitat for the Nellie cory cactus.

These ridges need to be searched for this cactus. The novaculite ridges are all on private land belonging to several different landowners. A cactus survey would require permission from each landowner.

4. Develop a comprehensive, trade management plan for all cacti.

Prior to development of trade strategies, studies are necessary to determine what species are in the trade, the overall trend of trade in listed cacti, the feasibility of reducing the collecting pressure on the wild populations by promoting a commercial, artificial propagation program and to determine strategies for effective implementation of law enforcement responsibilites of ESA, CITES, Lacey Act, and State laws. These studies should be national in scope and address all the cacti.

41. Develop a trade study.

Documentation of what species are in the trade and where they are coming from is of primary concern to the development of trade strategies. This would involve the investigation of the cacti dealers and catalogs, and interviews with knowledgeable individuals.

42. Develop a monitoring study to determine the impact of collecting.

Establish sample plots to monitor listed cacti and cacti suspected of being impacted by trade. Natural changes in populations as well as the success of recovery efforts would also be measured by the monitoring study. The impact of seed collecting and taking of cuttings are needed to understand harvest limits on the species.

43. Determine the feasibility of reducing the collecting pressure on the wild populations by promoting a commercial, artificial propagation program.

A commercial artificial propagation program may remove some of the collecting pressure on the cacti in the field. Some collectors enjoy raising their own plants from seeds or seedlings and if these are easily and economically available then the collectors may not turn to field collecting. Other collectors only want field collected plants, so some pressure is likely to exist on the wild populations.

44. Establish official FWS policy on the cactus trade problem.

To implement cacti recovery plans, it is necessary that FWS determine official policy concerning a commercial, artificial propagation program for cacti used in trade.

5. Develop public awareness, appreciation, and support for the preservation of the Nellie cory cactus.

Education of the public is a vital part of this recovery process. The cooperation of the public is essential for the ultimate success of the foregoing recovery measures. An appreciation of the Nellie cory cactus and its role in the environment needs to be developed. This can be started with educational programs such as pamphlets, talk programs, and slide shows.

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PART III

IMPLEMENTATION SCHEDULE

Priorities in column four of the implementation schedule are assigned using the following guidelines:

Priority one (1) - Those actions absolutely necessary to prevent extinction of the species.

Priority two (2) - Those actions necessary to maintain the species' current population status.

Priority three (3) - All other actions necessary to provide for full recovery of the species.

Abbreviations: FWS - USDI Fish and Wildlife Service
SE - Office of Endangered Species
LE - Law Enforcement
RE - Realty
TNC - The Nature Conservancy

GENERAL CATEGORIES FOR IMPLEMENTATION SCHEDULES

Information Gathering - I or R (research)

1. Population status
2. Habitat status
3. Habitat requirements
4. Management techniques
5. Taxonomic studies
6. Demographic studies
7. Propagation
8. Migration
9. Predation
10. Competition
11. Disease
12. Environmental contaminant
13. Reintroduction
14. Other information

Management - M

1. Propagation
2. Reintroduction
3. Habitat maintenance and manipulation
4. Predator and competitor control
5. Depredation control
6. Disease control
7. Other management

Acquisition - A

1. Lease
2. Easement
3. Management agreement
4. Exchange
5. Withdrawal
6. Fee title
7. Other

Other - O

1. Information and education
2. Law enforcement
3. Regulations
4. Administration

PART III IMPLEMENTATION SCHEDULE

GENERAL CATEGORY (1)	PLAN TASK (2)	TASK # (3)	PRIORITY # (4)	TASK DURATION (5)	RESPONSIBLE AGENCY FWS REGION (6)	RESPONSIBLE AGENCY FWS PROGRAM (6a)	RESPONSIBLE AGENCY OTHER (7)	FISCAL YEAR COSTS (EST.)* FY1 (8)	FY2	FY3	COMMENTS (9)
02	Enforce existing trade regulations under ESA, CITES, and the Lacey Act.	11	1	ongoing	2	LE		2,000	2,000	2,000	
M3	Develop a cooperative agreement with private landowners.	21	1	2	2	SE	TNC	1,000	1,000	1,000	
M3	Develop and implement habitat management plans for all existing C. minima habitat.	22	2	ongoing	2	SE		1,000	1,000	1,000	
A1,A6	Protect occupied suitable habitat.	23	1	3	2	SE RE	TNC				
R3,R6	Initiate and support studies on the population biology and ecology.	3	2	5	2	SE		10,000	10,000	10,000	
R14	Develop a trade study.	41	1	1	2	SE		20,000			
R1	Develop a monitoring study.	42	1	ongoing	2	SE		20,000	10,000	10,000	

*Costs refer to USFWS expenditures only

PART III IMPLEMENTATION SCHEDULE

GENERAL CATEGORY (1)	PLAN TASK (2)	TASK # (3)	PRIORITY # (4)	TASK DURATION (5)	RESPONSIBLE AGENCY FWS REGION (6)	RESPONSIBLE AGENCY FWS PROGRAM (6a)	RESPONSIBLE AGENCY OTHER (7)	FISCAL YEAR COSTS (EST.)* FY1 (8)	FY2	FY3	COMMENTS (9)
R7	Determine the feasibility of reducing collecting pressure by promoting artificial propagation program.	43	2	1	2	SE		15,000			
M7	Establish official FWS policy on the cactus trade problem.	44	2	1	2	SE		2,000			
01	Develop public awareness, appreciation, and support for the preservation of Nellie cory cactus.	5	3	ongoing	2	SE		3,000	3,000	3,000	

*Costs refer to USFWS expenditures only.

APPENDIX

LIST OF REVIEWERS

A TECHNICAL REVIEW DRAFT WAS SENT OUT FOR REVIEW ON OCTOBER 18, 1983, AND WAS COMMENTED ON BY THE FOLLOWING PEOPLE:

Director, U.S. Fish and Wildlife Service, Washington, DC (OES)

Harold E. Beaty, Texas Plant Recovery Team Leader, Temple, Texas 76502

Superintendent, Big Bend National Park, Big Bend National Park, Texas 79834

AN AGENCY REVIEW DRAFT WAS SENT OUT FOR REVIEW ON MARCH 27, 1984, AND WAS COMMENTED ON BY THE FOLLOWING PEOPLE:

Harold E. Beaty, Texas Plant Recovery Team Leader, Temple, Texas 76502

Chief, Office of Scientific Authority, U.S. Fish and Wildlife Service, Washington, DC

Director, U.S. Fish and Wildlife Service, Washington, DC

Field Supervisor, FWS, Forth Worth, Texas (ES)

Jackie M. Poole, Texas Natural Heritage Program, Austin, Texas 78701

Superintendent, Big Bend National Park, Big Bend National Park, Texas 79834

Charles D. Travis, Executive Director, Texas Parks and Wildlife Department, Austin, Texas 78744

Comments received and FWS responses to them are found in this Appendix.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

IN REPLY REFER TO:

JOHNSON
Bowman
Carney
Halverson
Hoffman
...owski
KAYSER
Hoon
Padilla
SANCHEZ
FILE Peggy PO

MAR 27 1984

Mr. Charles D. Travis
Executive Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Attn: Nongame Program Director

Dear Mr. Travis:

Enclosed for your review and comments is a copy of the agency review draft recovery plan for the Nellie cory cactus (Coryphantha minima).

This review involves agencies and individuals that may be affected by the recovery plan. This plan is a draft and has not yet been approved by the U.S. Fish and Wildlife Service. It was prepared by Service personnel from the technical review draft and from comments by reviewers of that draft. The plan is subject to modification following review and receipt of comments by cooperating agencies and other informed and interested parties.

We would appreciate receiving your comments by May 15, 1984. If you have any questions, please contact Peggy Olwell of the Endangered Species Office at (505) 766-3972.

Thank you for your interest and assistance.

Sincerely yours,

Conrad A. Fjetland

Assistant Regional Director

TO: Regional Director, USFWS, Albuquerque, NM

6 April 1984

Enclosure

A-1

Looks very good. I have made a few editing suggestions.

bc: Mr. Harold Beaty

Same letter sent to: (see attached list)

FWS REG 2
RECEIVED
APR 11 '84

Harold C. Beaty
3414 Forest Trail
Temple, TX 76502

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

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Padilla
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EEO
2-FILE SE
CL-5156

Memorandum

To: Regional Director, Region 2

Through: Associate Director-Research and Development

From: Chief, Office of Scientific Authority

Subject: Draft Recovery Plans for Cacti

This is in response to a request for our review of the agency review draft recovery plans for the Nellie cory cactus, Corphantha minima, and the Davis' green pitaya cactus, Echinocereus viridiflorous var. davisii.

B-1 Our detailed comments are noted on the attached copies of the documents. As a general matter, recovery plans might be an exercise in paperwork for species such as these. The cacti in question evidently are rare because they occupy very specific habitats, and as far as is known, they are as abundant now as in the past. Recovery is a misnomer for actions on behalf of such species. Would it not be better to direct recovery planning efforts at species in need of recovery?

Richard L. Jachowski

Attachment

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REF & W-REG. 2
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WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

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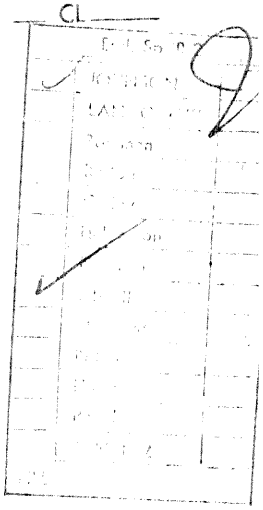

In Reply Refer To:
FWS/OES

JUN 4 - 1984

Memorandum

To: Regional Director, Region 2 (ARD/AFF)
Acting Associate
From: Director

Subject: Nellie Cory Cactus and Davis' Green Pitaya Recovery Plans - Agency Drafts

We have completed our review of the subject plans. A few minor comments may be found in the margins of the attached texts. We have also noted
C-1 the changes to the Stepdown Outlines described in your April 24, 1984, memorandum and have incorporated the new pages in the draft plans.

As noted in the past (see attached memorandum of August 22, 1983), many cactus recovery plans address similar threats which may make it feasible or desirable to produce one or a reduced number of management plans, combining several species. Similarly, since these two species are found
C-2 in the same or adjacent habitat, it may be more desirable to combine these two plans into a single recovery plan with a habitat protection approach covering both species. This would more effectively serve the implementation of recovery efforts for these two species. Also, combining these two plans would not be difficult, as the two plans are nearly identical.

A short discussion describing a projected management scenario would also
C-3 be useful in directing our recovery efforts. This should be added as part of the recovery objectives in Part II.

You should decide whether it is feasible at this time to combine these two plans. Whether or not the plans are combined into a single recovery plan, they are ready for final drafting. Please send us a copy of the signature page of the plan or plans, when approved. When available, please forward 30 copies of the printed plans to OES for distribution.

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Attachments

James R. Fielding

J. R. Fielding

REC'D
FWS-Region 2
JUN 7 1984
AFF

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT U.S. FISH & WILDLIFE SERVICE

Memorandum

TO : Regional Director, FWS, Albuquerque, NM (SE) DATE: April 10, 1984

FROM : Field Supervisor, FWS, Fort Worth, TX (ES)

SUBJECT: Agency Review - Draft Recovery Plan - Nellie cory cactus (Coryphantha minima) and Davis' green pitaya cactus (Echinocerus viridiflorus var. davisii)

We have reviewed the subject draft recovery plans and have no comments at this time.

D-1

Jerome L. Johnson

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APR 12 '84
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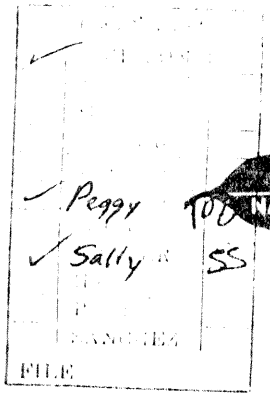

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April 23, 1984

Mr. Conrad Fjetland
Assistant Regional Director
U. S. Fish and Wildlife Service
P. O. Box 1306
Albuquerque, NM 87103

Dear Mr. Fjetland:

I have received and reviewed the agency draft recovery plan for the Nellie Cory cactus (Coryphantha minima). I feel that the following comments are in order:

E-1 1. On page 7, in the section "Associated Species", Prosopis juliflora is listed. P. glandulosa is now the widely accepted name for this taxon, and is also the name used by Correll and Johnston in the Manual of the Vascular Plants of Texas.

E-2 2. On page 1 of the taxonomy section, the phrase "no references to a type specimen" is unclear as to whether the reference is to Coryphantha minima or C. nellieae. Both have type specimens, with C. minima being recently lectotypified by Benson (see Benson's 1982 work, The Cacti of the United States and Canada, page 959).

E-3 Frankly, it seems inconceivable that Coryphantha minima, without typification, would be federally listed. Although one could assume that the taxon would be defined through C. nellieae, the possibility existed that C. minima might well have proven to be a different entity based on the then-unknown type specimen. If, through such typification, C. minima was not the same as C. nellieae, then the wrong plant would have been protected. C. minima might have turned out to be a common cactus, not requiring protection at all. Time and work would have been wasted and more time and work would have been required to correct the error. The integrity of the Endangered Species Program would have also been called into question.

I hope that you will give serious consideration to these comments. If you would like to discuss these further, please do not hesitate to contact me.

Sincerely,

Jackie M. Poole

Jackie M. Poole
Botanist, Texas Natural Heritage Program

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FWS-Region 2
APR 26 1984
AFF

United States Department of the Interior
NATIONAL PARK SERVICE
Big Bend National Park
Big Bend National Park, Texas 79834

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IN REPLY REFER TO:

N1621

May 14, 1984

SE

Memorandum

To: Assistant Regional Director, U.S. Fish and Wildlife Service, Region 2

From: Superintendent, Big Bend National Park

Subject: Agency Review Draft Recovery Plan for the Nellie cory cactus (Coryphantha minima)

Our comments are as follows:

F-1 1. Page 6, first paragraph, last sentence - Evidence indicates..... This sentence could be dropped as the statement appears in the first sentence of this page.

F-2 2. Page 2, Morphology, line 7 - (Benson, 1969) - No reference is made concerning this citation in the literature cited section on page 20.

F-3 3. No mention is made of the following reference: Benson, 1982. The Cacti of the United States and Canada. Stanford University, Stanford, California. 1044 pp.

We appreciate the opportunity to comment on this Agency Draft Review.

H. Gilbert Lusk

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TEXAS
PARKS AND WILDLIFE DEPARTMENT
4200 Smith School Road Austin, Texas 78744

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Bowman
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June 1, 1984

Mr. Michael J. Spear
Director, Region 2
U. S. Fish and Wildlife Service
P. O. Box 1306
Albuquerque, New Mexico 87103

Dear Mike:

This is in response to your letters of March 27 and March 30, 1984 regarding the agency review draft recovery plans for the Nellie cory cactus (Coryphantha minima) and Davis' green pitaya (Echinocereus viridiflorus davisii), respectively.

We have reviewed the plans and believe them to present viable strategies for conservation of these species.
G-1 However, perhaps a section describing current protection would be appropriate for inclusion in the plans. These species have been listed as endangered not only under federal regulations but also by the State of Texas (regulations enclosed). In addition, the degree of protection afforded these species by landowners in denying or limiting access to areas where the species
G-2 occur could have a profound effect on plan viability.

Thank you for the opportunity to comment. Let us know if we may be of further assistance.

Sincerely,

Charles D. Travis
Executive Director

CDT:FEP:aeh

Enclosure

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JUN 4 1984
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REGIONAL DIRECTOR

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RESPONSES TO COMMENTS ON AGENCY REVIEW DRAFT

A-1 Suggestions were incorporated.

B-1 Suggestions were incorporated where appropriate.

C-1 Comments were incorporated.

C-2 Comment was noted. The two plans probably could have been easily combined at an earlier stage; however, at this point it would not be time efficient to combine them.

C-3 Suggestion was incorporated.

D-1 Response noted.

E-1 Information was incorporated.

E-2 The phrase was in error and was removed.

E-3 The lectotypification of C. minima was inadvertently overlooked when the draft of this plan was written, since such a type exists, no such problems of misnomer will occur. However, if C. minima had not had a designated type at the time of Federal listing it would not have been a serious problem. Baird's description of this species gave a fairly specific type locality and the chance of atypical material being later designated as the type was not considered great. Based on Baird's description and other works, it was also clear what entity was being treated as Coryphantha minima. If the name of a listed species is later changed, that change is reflected in the Federal list and a simple notice is published in the Federal Register explaining the name change. Inappropriate taxa are not provided protection. In the event that a taxon is found to be taxonomically invalid, it can be promptly delisted. Taxonomy is far from an exact science and the Endangered Species Program must proceed based on the best available data. The integrity of the Endangered Species Program would be jeopardized to a far greater degree if protection were withheld from threatened plants simply because of a nomenclatural deficiency.

F-1 Suggestion was incorporated.

F-2 Suggestion was incorporated.

F-3 Reference has been incorporated.

G-1 Comment was incorporated in the introduction.

G-2 The Service recognizes the importance of the private landowners in the recovery of the Nellie cory cactus and this is addressed under Task 21.