DRAFT
IIMPLEMENTATION SCHEDULE FOR THE
SOUTH FLORIDA MULTI-SPECIES RECOVERY PLAN
4/2/2004

Introduction

The U.S. Fish and Wildlife Service's (Service) 1999 South Florida Multi-Species Recovery Plan (MSRP), approved in May 1999, provides an ecosystem-based approach to ensure a viable future for all federally listed species as well as other native species in the south Florida landscape.

The final chapter of the MSRP discusses implementation of the recovery and restoration tasks included in the MSRP through the creation of a Multi-species/Ecosystem Recovery Implementation Team (MERIT). MERIT was appointed by the Service in 1999. Because many stakeholders are involved in the south Florida restoration process, this team is comprised of approximately 40 members representing Federal, State, and local governmental agencies; Tribal governments; academia; industry; and the private sector. One of the primary goals of MERIT is to produce this Technical/Agency Draft Implementation Schedule that prioritizes the recovery actions from the MSRP.

Species and Communities Included in the Implementation Schedule

The MSRP implementation schedule includes only those species that occur in south Florida for which the South Florida Ecological Services Office has recovery lead (Table 1). Other Service field offices have recovery responsibility for species that occur in south Florida but also occur elsewhere (Table 1). The MSRP outlines how south Florida will contribute to their rangewide recovery objective, but does not replace their approved, rangewide recovery plans. As a result, those species for which the South Florida Ecological Services Office does not have recovery lead are not included in this implementation schedule.

The 42 species included in the implementation schedule are representative of 14 of the 23 ecological communities in the MSRP. Those communities and species are listed in Table 2. The communities *not* included in the implementation schedule are: high pine, maritime hammock, mesic temperate hammock, cutthroat grass, the three forested wetland types, seagrasses, and nearshore/midshore reefs. These communities were excluded because they do not comprise the primary habitat for species for which the South Florida Ecological Services Office has recovery lead. The Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq*.), requires that priority numbers and costs be assigned to individual species tasks in the implementation schedule, so there are no direct priority numbers assigned to the community-level restoration actions.

Organization of the Implementation Schedule

The implementation schedule is organized according to community types, and includes the task priority, task number, task description, task duration, participating parties, and estimated cost per task for each of the 42 species that occupy those communities. These tasks, when accomplished, will bring about the recovery of those species. Although many of the species occur in more than one

ecological community, they were included in this implementation schedule according to their most predominant community type (Table 2).

Parties with authority, responsibility, or expressed interest to implement a specific recovery task are identified in the implementation schedule as "participants." The inclusion of a participant in the implementation schedule does not imply a requirement or that prior approval has been given by those identified to participate or expend funds. However, participants can benefit by being able to show in their own budget submittals that their funding request is for a recovery task which has been identified in an approved recovery plan and is, therefore, part of the overall coordinated effort to recover the species. Also, section 7(a)(1) of the Act directs all Federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of threatened and endangered species.

Following are definitions to column headings and keys to abbreviations and acronyms used in the implementation schedule:

Priority Number

Priority 1 - An action that must be taken to prevent extinction or to prevent the species from declining irreversibly in the foreseeable future.

Priority 2 - An action that must be taken to prevent a significant decline in species population/habitat quality or some other significant impact short of extinction.

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

Task Number and Task Description

Species-level (s) and habitat-level (h) recovery actions are numbered in the MSRP. A four-letter code is used in the implementation schedule for each of the species and the associated community-level restoration task(s) (Table 2).

Participants and Other Parties Referenced in the Implementation Schedule

Archbold	Archbold Biological Station
BLM	Bureau of Land Management
Bok	Bok Tower Gardens
CLNWR	Crocodile Lake National Wildlife Refuge
COE	U.S. Army Corps of Engineers
counties	South Florida counties
county parks	South Florida county parks
DERM	Department of Environmental Resources Management
DOF	Florida Division of Forestry
DOT	Florida Department of Transportation
EPA	Environmental Protection Agency
FDACS	Florida Department of Agriculture and Consumer Services

FDACS/DPI	Florida Department of Agriculture and Consumer Services/Division of Plant Industry
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
FWS	U.S. Fish and Wildlife Service
local government	City and county agencies
NAS	Naval Air Station
NGO	Non-governmental organization
NKDR	National Key Deer Refuge
NP	National Park
NPS	National Park Service
NRCS	Natural Resources Conservation Service
private	Private industry, landowners, etc.
state parks	South Florida state parks
TAMU	Texas A&M University
Tribes	Miccosukee and Seminole Indian Tribes
universities	Public and private universities
USAF	U.S. Air Force
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USGS/BRD	U.S. Geological Survey/Biological Resources Division
WEA	Wildlife Environmental Area
WMD	Water Management Districts located in South Florida

Estimated Cost of Recovery

The implementation schedule includes the estimated cost of accomplishing each recovery task. These costs were calculated as totals per community for the multiple species that occur within each community (Table 3). The costs for those specific tasks are provided in the implementation schedule. Costs for land acquisition, management, and restoration will be more accurately determined as the MSRP is implemented.

Table 1. Status and Lead Fish and Wildlife Service Office for Recovery of Species Included in the MSRP.

Mammals (except whales)			
Key deer	*Odocoileus virginianus clavium*	E	Vero Beach, FL
West Indian manatee	*Trichecus manatus*	E	Jacksonville, FL
Key Largo cotton mouse	*Peromyscus gossypinus allapaticola*	E	Vero Beach, FL
Southeastern beach mouse	*Peromyscus polionotus niveiventris*	T	Jacksonville, FL
Florida panther	*Puma (Felis) concolor coryi*	E	Jacksonville, FL
Lower Keys rabbit	*Sylvilagus palustris hefneri*	E	Vero Beach, FL
Rice rat	*Oryzomys palustris natator*	E	Vero Beach, FL
Key Largo woodrat	*Neotoma floridana smalli*	E	Vero Beach, FL
Birds			
Audubon's crested caracara	*Polyborus plancus audubonii*	T	Vero Beach, FL
Bald eagle	*Haliaeetus leucocephalus*	T	Midwest Region
Florida scrub-jay	*Aphelocoma coerulescens*	T	Jacksonville, FL
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E	Vero Beach, FL
Piping plover (Atlantic population)	*Charadrius melodus*	T	Northeast Region
Wood stork	*Mycteria americana*	E	Jacksonville, FL
Roseate tern	*Sterna dougallii dougallii*	T	Northeast Region
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E	Vero Beach, FL
Florida grasshopper sparrow	*Ammodramus savannarum floridanus*	E	Vero Beach, FL
Bachman's warbler	*Vermivora bachmanii*	E	Charleston, SC
Kirtland's warbler	*Dendroica kirtlandii*	E	East Lansing, MI
Ivory-billed woodpecker	*Campephilus principalis*	E	Lafayette, LA
Red-cockaded woodpecker	*Picoides borealis*	E	Clemson, SC

Reptiles			
American crocodile	*Crocodylus acutus*	E	Vero Beach, FL
Bluetail mole skink	*Eumeces egregius lividus*	T	Vero Beach, FL
Sand skink	*Neoseps reynoldsi*	T	Vero Beach, FL
Atlantic salt marsh snake	*Nerodia clarkii taeniata*	T	Jacksonville, FL
Eastern indigo snake	*Drymarchon corais couperi*	T	Jackson, MS
Green sea turtle	*Chelonia mydas*	E	Jacksonville, FL
Hawksbill sea turtle	*Eretmochelys imbricata*	E	Jacksonville, FL
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	Southwest Region
Leatherback sea turtle	*Dermochelys coriacea*	E	Jacksonville, FL
Loggerhead sea turtle	*Caretta caretta*	T	Jacksonville, FL
Invertebrates			
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E	Vero Beach, FL
Stock Island tree snail	*Orthalicus reses* (exc. *nesodryas*)	T	Vero Beach, FL
Plants			
Crenulate lead-plant	*Amorpha crenulata*	E	Vero Beach, FL
Four petal pawpaw	*Asimina tetramera*	E	Vero Beach, FL
Florida bonamia	*Bonamia grandiflora*	T	Jacksonville, FL
Fragrant prickly-apple	*Cereus eriophorus* var. *fragrans*	E	Vero Beach, FL
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E	Vero Beach, FL
Garber's spurge	*Chamaesyce garberi*	T	Vero Beach, FL
Pygmy fringe-tree	*Chionanthus pygmaeus*	E	Vero Beach, FL
Florida golden aster	*Chrysopsis floridana*	E	Jacksonville, FL
Florida perforate cladonia	*Cladonia perforata*	E	Vero Beach, FL
Pigeon wings	*Clitoria fragrans*	T	Vero Beach, FL
Short-leaved rosemary	*Conradina brevifolia*	E	Vero Beach, FL

Avon Park harebells	*Crotalaria avonensis*	E	Vero Beach, FL
Okeechobee gourd	*Cucurbita okeechobeensis* spp. *okeechobeensis*	E	Vero Beach, FL
Beautiful pawpaw	*Deeringothamnus pulchellus*	E	Vero Beach, FL
Garrett's mint	*Dicerandra christmanii*	E	Vero Beach, FL
Scrub mint	*Dicerandra frutescens*	E	Vero Beach, FL
Lakela's mint	*Dicerandra immaculata*	E	Vero Beach, FL
Scrub buckwheat	*Eriogonum longifolium* var. *gnaphalifolium*	T	Jacksonville, FL
Snakeroot	*Eryngium cuneifolium*	E	Vero Beach, FL
Small's milkpea	*Galactia smallii*	E	Vero Beach, FL
Highlands scrub hypericum	*Hypericum cumulicola*	E	Vero Beach, FL
Beach jacquemontia	*Jacquemontia reclinata*	E	Vero Beach, FL
Scrub blazing star	*Liatris ohlingerae*	E	Vero Beach, FL
Scrub lupine	*Lupinus aridorum*	E	Jacksonville, FL
Britton’s beargrass	*Nolina brittoniana*	E	Jacksonville, FL
Papery whitlow-wort	*Paronychia chartacea*	T	Vero Beach, FL
Key tree-cactus	*Pilosocereus robinii*	E	Vero Beach, FL
Lewton's polygala	*Polygala lewtonii*	E	Vero Beach, FL
Tiny polygala	*Polygala smallii*	E	Vero Beach, FL
Wireweed	*Polygonella basiramia*	E	Vero Beach, FL
Sandlace	*Polygonella myriophylla*	E	Vero Beach, FL
Scrub plum	*Prunus geniculata*	E	Jacksonville, FL
Wide-leaf warea	*Warea amplexifolia*	E	Jacksonville, FL
Carter's mustard	*Warea carteri*	E	Vero Beach, FL
Florida ziziphus	*Ziziphus celata*	E	Vero Beach, FL

Table 2. Species by Ecological Community Included in the MSRP Implementation Schedule.

Florida Scrub/Scrubby Flatwoods/Scrubby High Pine (sc)

aste	Four petal pawpaw
btms	Bluetail mole skink
cefr	Fragrant prickly-apple
chpy	Pygmy fringe-tree
clfr	Pigeon wings
clpe	Florida perforate cladonia
cobr	Short-leaved rosemary
crav	Avon Park harebells
dich	Garrett's mint
difr	Scrub mint
diim	Lakela's mint
ercu	Snakeroot
hicu	Highlands scrub hypericum
lioh	Scrub blazing star
pach	Papery whitlow-wort
poba	Wireweed
pole	Lewton's polygala
pomy	Sandlace
sask	Sand skink
waca	Carter's mustard
zice	Florida ziziphus

Beach Dune/Coastal Strand (bdcs)

jare	Beach jacquemontia

Tropical Hardwood Hammock (thh)

klcm	Key Largo cotton mouse
klwr	Key Largo woodrat
piro	Key tree-cactus
ssbu	Schaus swallowtail butterfly
sits	Stock Island tree snail

Pine Rocklands (pr)

acre	Crenulate lead-plant
kede	Key deer
chde	Deltoid spurge
chga	Garber's spurge
gasm	Small's milkpea
posm	Tiny polygala

Mesic and Hydric Pine Flatwoods (mpf)

depu Beautiful pawpaw

Dry Prairie (dp)
acca Audubon's crested caracara
fgsp Florida grasshopper sparrow

Freshwater Marsh/Wet Prairie (fm)
csss Cape Sable seaside sparrow
cuok Okeechobee gourd
eski Everglade snail kite

Mangrove (mn)
amcr American crocodile

Coastal Salt Marsh (sm)
lkra Lower Keys rabbit
rira Rice rat

Table 3. Estimated Cost of Recovery for Implementation of the MSRP.

Community	Year 1	Year 2	Year 3	Total (1,000s)
Fresh marsh wet prairie	93,594	93,454	93,219	280,267
Dry prairie	1,104	1,014	954	3,072
Mesic pine flatwoods	421	411	301	1,133
Beach dune	518	508	478	1,504
Mangrove	25,777	25,763	25,748	77,288
Pine rocklands	2,617	2,410	1,470	6,497
Coastal salt marsh	1,095	1,013	808	2,916
Scrub	3,656	3,162	2,748	9,566
Hammock	1,896	1,810	1,258	4,964
Total (1,000s)	**130,678**	**129,545**	**126,984**	**387,207**

These total cost estimates do not include amounts for habitat acquisition, management, or restoration because those tasks are expressed as costs per acre and could not be combined with overall costs per species.

Acknowledgements

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Coastal Salt Marsh

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Disclaimer

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By approving this implementation schedule for the MSRP, the Regional Director certifies that the data used in its development represent the best scientific and commercial data available at the time it was written. Copies of all documents reviewed in development of the implementation schedule are available in the administrative record, located at U.S. Fish and Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida, 32960.

References to this document should be written as follows:

U.S. Fish and Wildlife Service. 2004. South Florida multi-species recovery plan implementation schedule. Atlanta, Georgia.

Additional paper and CD-ROM copies may be obtained from:

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Beach Dune/Coastal Strand Implementation

jare = beach jacquemontia **s = species task**

bdcs = beach dune/coastal strand **h = habitat task**

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
2	jare-h1.1.1	Prevent direct destruction of beach jacquemontia (Jacquemontia reclinata) habitat by establishing setbacks from the primary dune.	as needed	FWS, FDEP, counties, local government				Cost included in planning agency's budget.
2	jare-h1.1.2	Prevent or eliminate human disturbance to dunes	as needed	FWS, FDEP, counties, local government	20	20	20	
2	jare-h1.1.3	Enforce regulations prohibiting use of motor or man-powered vehicles on beaches and dune habitat.	as needed	FWS, FDACS/DPI, FDEP	10	10	10	
1	jare-h1.2 [bdcs-2.2, 4.1, 5.1, 6.2]	Extirpate or control exotic plants.	continuous	FWS, FDEP, counties, local government	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
3	jare-h2.0 [bdcs-2.5, 3.1, 3.2, 4.2]	Restore beach dune habitat.	continuous	FWS, FDEP, counties, local government	20/acre	20/acre	20/acre	Total cost dependent upon number of acres being restored.
2	jare-h3.0	Conduct habitat-level research projects.	3-5 years	FWS, NGO, universities	60	60	60	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	jare-h4.0 [bdcs-3.3, 5.1, 5.2]	Monitor habitat and ecological processes.	continuous	FWS, NGO, FDEP, counties, local government	25	25	25	
3	jare-h5.0 [bdcs-4.3, 6.1]	Provide public information about coastal ecosystems.	continuous	FWS, NGO	10	5	5	
2	jare-s1.1	Conduct surveys to determine the status of known populations.	completed					
2	jare-s1.2	Survey for additional populations in Palm Beach, Broward, and Dade Counties.	completed					
2	jare-s1.3 [bdcs-3.3]	Maintain distribution data in a GIS database.	continuous	FWS, NGO, FDEP, counties, FNAI	1	1	1	
3	jare-s2.1	Protect any existing populations on private land through acquisition, conservation easements, or agreements with landowners.	as needed	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	jare-s2.2	Inform State, county, and city agencies of jare presence on public lands and provide information on conservation methods and management practices for these populations	continuous	FWS, FDACS, FDEP, counties, local government, FNAI	2	2	2	
3	jare-s2.3.1	Establish protocols for restoration of jare.	completed					
3	jare-s2.3.2	Locate potential (re)introduction sites for jare within historic range.	completed					
3	jare-s2.3.3 [bdcs-2.3]	(Re)introduce jare to protected sites.	5-10 years	FWS, NGO, FDEP, counties, local government, universities	15	15	15	
3	jare-s2.3.4 [bdcs-2.3, 2.5, 3.1]	Reestablish plants as part of dune restoration efforts.	continuous	FWS, NGO, FDEP, counties, local government	15	15	15	
3	jare-s2.4.1	Send jare seeds to seed bank for long term storage.	2 years	FWS, NGO, USDA	5	5		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	jare-s2.4.2	Continue jare propagation and development of successful horticultural methods.	continuous	FWS, NGO	10	10	10	
1	jare-s2.4.3	Establish and maintain ex situ collection.	continuous	FWS, NGO	10	10	10	
2	jare-s2.5.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	jare-s2.5.2	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost dependent upon specific situation.
2	jare-s3.1	Continue research to determine demographic information.	3-5 years	FWS, NGO, universities	20	20	20	
2	jare-s3.2	Conduct population viability and risk assessment analysis.	3 years	FWS, NGO, universities	20	20	20	
1	jare-s3.3	Conduct research to assess management requirements of jare.	3-5 years	FWS, NGO	75	75	75	At least 2 years' data needed for PVA.
1	jare-s3.4	Determine response to habitat changes and management manipulations.	3-5 years	FWS, NGO, universities, counties, FDEP	30	30	20	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
2	jare-s3.5	Develop a quantitative description of the population structure of jare.	3-5 years	FWS, NGO	30	30	30	
3	jare-s3.6	Conduct population viability and risk assessment analysis.	3 years	FWS, NGO, universities	20	20	20	
2	jare-s4.1.1	Develop a monitoring protocol to assess population trends.	2 years	FWS, NGO, universities	15	15		
2	jare-s4.1.2 [bdcs-5.1, 5.2]	Monitor to detect changes in demographic characteristics.	continuous	FWS, NGO, universities	20	20	20	
2	jare-s4.1.3 [bdcs-5.1, 5.2]	Monitor the effects of land management activities.	continuous	FWS, NGO, FDEP, counties, local government	25	25	25	
3	jare-s4.1.4 [bdcs-5.1, 5.2]	Monitor introduced plants.	continuous	FWS, NGO, FDEP, counties, local government	20	20	20	
1	jare-s4.2 [bdcs-5.1, 5.2]	Assess management requirements.	continuous	FWS, FDACS/DPI, FDEP, counties, local government, FNAI, NGO, universities	50	50	50	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	jare-s5.0 [bdcs-4.3, 6.1]	Provide public awareness about additional threats to jare.	continuous	FWS, FDEP, universities, counties, local government	10	5	5	

Coastal Salt Marsh Implementation

lkra = Lower Keys rabbit **h = habitat task** **sm = coastal salt marsh**

rira = rice rat **s = species task**

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	lkra-h1.1.1 [sm-2.2]	Continue Federal acquisition efforts for Lower Keys rabbit.	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
2	lkra-h1.1.2 [sm-2.3]	Support State acquisition efforts.	continuous	FWS, FWC				Cost dependent upon specific site and amount of land acquired.
2	lkra-h1.1.3 [sm-2.0, 3.0]	Support and encourage land acquisition by non-governmental agencies.	continuous	FWS, NGO				Cost dependent upon specific site and amount of land acquired.
1	lkra-h1.2.1 [sm-2.4]	Protect marsh rabbit on private lands through acquisition, landowner agreements, conservation easements.	continuous	FWS, FEMA, FDEP, TNC, private				Cost dependent upon type of protection provided. Several land acquisition programs are underway.
1	lkra-h1.2.2	Protect marsh rabbit on public lands.	continuous	FWS, FWC, FEMA, counties				Cost dependent upon type of protection provided.
2	lkra-h1.2.3 [sm-3.2]	Coordinate with Federal, State and Monroe County agencies and private entities to develop management actions to protect marsh rabbit habitat.	1-2 years	FWS, NAS, FWC, FEMA, counties, private	5	5		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	lkra-h1.2.4	Protect important corridors.	continuous	FWS, NAS, FWC, counties				Cost dependent upon type of protection provided.
3	lkra-h1.2.5 [sm-3.1.2, 3.1.3, 7.4]	Remove invasive exotic vegetation.	continuous	FWS, NAS	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres infested with exotics.
1	lkra-h1.2.6	Prevent habitat areas from being mowed.	continuous	FWS, NAS, counties, private	1	1	1	
2	lkra-h1.2.7 [sm-3.7]	Fence or barricade areas where off-road vehicle (ORV) use and/or dumping is a threat.	3-5 years	FWS, NAS	25	25	25	
1	lkra-h1.2.8	Continue cooperative management at NAS, Key West. NAS has minimized their impacts on the Lower Keys marsh rabbit through management actions.	continuous	FWS, NAS				Cost dependent upon type of management implemented.
3	lkra-h2.1 [sm-4.4.1, 4.4.3]	Restore natural tidal flow and hydrology by placing culverts or removing fill.	5-10 years	FWS, DOT, COE, NGO, FDEP				Too many variables to accurately determine cost.
3	lkra-h2.2 [sm-3.6]	Manage mosquito ditches so they do not impact rabbit habitat.	continuous	FWS, FDEP, NAS, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	lkra-h2.3	Improve water quality in freshwater sources and create additional freshwater sources.	3-5 years	FWS, WMD, COE	35	35	35	
2	lkra-h2.4 [sm3.0, 5.1]	Enhance Lower Keys marsh rabbit habitat.	continuous	FWS	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	lkra-h2.5 [sm4.4.2, 5.4]	Improve habitat by planting or encouraging native plant species.	continuous	FWS	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	lkra-h2.6	Create habitat by filling and restoring areas that have been dredged or altered.	continuous	FWS, NAS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being created for habitat.
2	lkra-h3.1.1	Conduct radiotelemetry on other subpopulations.	2 years	FWS, universities	17	17		Task substantially completed by Forys 1995 study, then updated starting 2001 by TAMU. Further work is likely to be useful.
1	lkra-h3.1.2	Investigate the effect of habitat change.	3-5 years	FWS, NAS, universities	50	50	50	
2	lkra-h3.2.1	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	2 years	FWS, NAS, universities	17	17		Task largely completed by Forys 1995 study, then updated starting 2001 by TAMU. Further work is likely to be useful.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
1	lkra-h3.2.2	Determine home range and minimum area required.	completed					Task completed by Forys 1995 study.
1	lkra-h3.2.3	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of Lower Keys marsh rabbits.	completed					Task completed by Forys 1995 PVA model.
2	lkra-h4.0	Monitor the status of marsh rabbit habitat and examine ecological processes.	continuous	FWS, universities	20	20	20	
3	lkra-h5.0 [sm-8.0]	Increase public awareness of Lower Keys Marsh rabbit habitat and instill stewardship.	continuous	FWS, NGO, private	5	5	5	Refuge visitor center provides information regarding the marsh rabbit.
2	lkra-s1.1	Conduct additional surveys to refine marsh rabbit distribution.	2 years	FWS, universities	17	17		Task completed by Forys 1995 and Forys et. al 1995 studies; updated survey initiated in 2001 by TAMU.
2	lkra-s1.2	Conduct presence/absence surveys in areas of unoccupied habitat.	2-3 years	FWS, universities	17	17	17	Task completed by Forys 1995 and Forys et. al 1995 studies; updated survey initiated in 2001 by TAMU.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
2	lkra-s1.3 [sm-6.1, 6.2.1]	Investigate components of both occupied and unoccupied marsh rabbit habitat and determine why rabbits are present or absent.	2 years	FWS, universities	17	17		Task substantially completed by Forys 1995 study, but further more detailed work is likely to be useful.
3	lkra-s1.4	Maintain and improve the GIS database for marsh rabbit information.	continuous	FWS, FWC, universities	3	3	3	
3	lkra-s2.1	Assign a biologist responsibility for implementing recovery actions for the threatened or endangered species of the Lower Keys.	completed					Biologist currently stationed in Vero Beach Ecological Services office and Big Pine Key suboffice.
1	lkra-s2.2.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation and supplementation efforts of Lower Keys marsh rabbits using the IUCN/SSC Guidelines for Reintroductions.	1-2 years	FWS, NAS, universities	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	lkra-s2.2.2	Reintroduce marsh rabbits on Water Key.	1 year	FWS, universities	10			11 rabbits were translocated to Little Pine Key in Jan-April 2002. Monitoring continues; project appears successful.
1	lkra-s2.2.3	Conduct reintroduction of marsh rabbits to other areas.	1 year	FWS, NAS, universities	10			Task presently being implemented by TAMU study initiated in 2001.
3	lkra-s2.3	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	lkra-s2.4	Provide information about marsh rabbits to Federal, state, county and city agencies.	continuous	FWS, FWC, NGO, counties	3	3	3	
2	lkra-s2.5.1.1	Continue coordination efforts with NAS, Key West to eliminate free roaming cats from that Federal facility.	continuous	FWS, NAS	4	4	4	No systematic effort to control feral and free-range domestic cats is presently in place.
1	lkra-s2.5.1.2	Reduce impacts by free roaming cats. Develop deed restrictions to prohibit free roaming cats in rabbit sensitive areas.	continuous	FWS, NAS, counties, private	4	4	4	No systematic effort to control feral and free-range domestic cats is presently in place.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	lkra-s2.5.2	Control raccoon predation. Raccoon populations are unnaturally high in some areas of the Lower Keys.	continuous	FWS, NAS, counties	2	2	2	No systematic effort to control raccoons is presently in place.
3	lkra-s2.5.3.1	Install chatter strips at known rabbit crossing areas on NAS, Key West and Monroe County roads, where feasible.	1 year	FWS, NAS, counties, DOT	18			
3	lkra-s2.5.3.2	Implement slower speed zones and increase enforcement of existing zones to decrease rabbit roadkills.	continuous	FWS, NAS, counties, DOT	4			After task is implemented, cost of enforcing speed zones will be included in responsible agency's budget.
3	lkra-s2.5.4	Control poaching.	continuous	FWS, FWC				Although not a documented problem, task is currently enforced and cost is included in responsible agency's budget.
1	lkra-s2.6	Establish captive propagation protocols and plans.	1 year	FWS, universities	10			
2	lkra-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	3-5 years	FWS, universities	50	50	50	

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	lkra-s3.2	Examine effects on the persistence of the Lower Keys marsh rabbit.	2-3 years	FWS, NAS, universities	35	35	35	
3	lkra-s3.3	Determine the effective population size.	3-5 years	FWS, universities	50	50	50	
2	lkra-s3.4.1	Identify subpopulations vulnerable to extinction.	2 years	FWS, NAS, universities	17	17		Task substantially completed by Forys 1995 and Forys et. al 1995 studies; updated survey initiated in 2001 by TAMU.
2	lkra-s3.4.2	Determine the necessary number of subpopulations and level of exchange that will enable the rabbit to persist for 100 years.	2-3 years	FWS, universities	50	50	50	
1	lkra-s3.5	Conduct an experimental marsh rabbit reintroduction and evaluate its effectiveness in increasing the rabbits' persistence.	2-3 years	FWS, universities	15	15	15	Task presently being implemented by TAMU study initiated in 2001. Not complete.
1	lkra-s4.1	Conduct long-term monitoring.	continuous	FWS, universities	10	10	10	
1	lkra-s4.2	Develop methods to monitor demographic parameters.	continuous	FWS, universities	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	lkra-s5.1	Prepare informational material for the general public.	continuous	FWS, NGO, counties	5	5	5	Refuge visitor center provides information regarding the marsh rabbit.
3	lkras5.2	Develop and implement a free-roaming cat control program.	continuous	FWS, NAS, counties, private	4	4	4	No systematic effort to control feral and free-range domestic cats is presently in place.
3	lkra-s5.3	Continue to inform military and civilian personnel at NAS. Inform personnel about the marsh rabbit's presence, its protection under the ESA, and ways to minimize impacts on it.	continuous	FWS, NAS	1	1	1	NAS has natural resource personnel assigned to this task.
2	rira-h1.1 [sm-1.1]	Determine the status of rice rat habitat	completed					Task completed by Forys et al. 1995 and Goodyear 1995 studies.
2	rira-h1.2.1 [sm-2.2]	Continue Federal acquisition efforts.	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
2	rira-h1.2.2 [sm-2.3]	Support State, local and non-governmental organizations' acquisition efforts.	continuous	FWS, FWC, counties, FDEP, WMD, NGO				Cost dependent upon specific site and amount of land acquired.
2	rira-h1.3.1	Protect rice rats on public lands.	continuous	FWS, FEMA, FWC, COE, counties				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	rira-h1.3.2 [sm-2.4]	Protect rice rats on private lands.	continuous	FWS, FEMA, private				Cost dependent upon type of protection provided.
2	rira-h1.3.3 [sm-3.2]	Coordinate with Federal, State and Monroe County agencies and private entities to develop management action to protect silver rice rat habitat.	1-2 years	FWS, FWC, FDEP, counties, WMD, private	5	5		
2	rira-h1.3.4	Establish and protect 500 m buffers around Priority 1 habitat.	continuous	FWS				Cost dependent upon specific site and amount of land acquired for buffer zones.
3	rira-h1.3.5	Control free roaming horses on Cudjoe Key.	continuous	FWS				Task currently enforced and cost is included in responsible agency's budget.
2	rira-h1.3.6 [sm-3.7]	Restrict access to silver rice rat habitat.	continuous	FWS, counties, private, FDEP, NAS				Task currently enforced and cost is included in responsible agency's budget.
3	rira-h1.3.7 [sm-3.1.2-3.1.3, 7.4]	Eliminate exotic vegetation.	continuous	FWS, counties, private, FDEP	1.5/ acre	1.5/ acre	1.5/ acre	Total cost dependent upon number of acres infested with exotics.
2	rira-h2.1 [sm-4.4.1-4.4.2]	Re-establish natural hydrology and water circulation in silver rice rat habitat.	5-10 years	FWS, DOT, COE, NGO, FDEP				Too many variables to accurately determine cost.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	rira-h2.2 [sm-5.1]	Restore both occupied and unoccupied silver rice rat habitat.	continuous	FWS, FWC, FDEP, NAS, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
2	rira-h2.3 [sm-3.1.3, 4.4.3]	Improve water quality in freshwater sources and create freshwater sources.	3-5 years	FWS, WMD, COE	35	35	35	
3	rira-h2.4 [sm-4.4.2]	Improve habitat by planting or encouraging native plant species.	continuous	FWS	.5/acre	.5/acre	.5/ acre	Total cost dependent upon number of acres being improved.
3	rira-h2.5	Create habitat by refilling and creating suitable habitat areas.	continuous	FWS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being created for habitat.
3	rira-h3.1.1 [sm-6.2.1]	Investigate stable home range and minimum area requirements.	completed					Task completed by Goodyear 1995 study.
3	rira-h3.1.2 [sm-6.2.2]	Investigate the effect of habitat change.	3-5 years	FWS, FWC, universities, private	50	50	50	
2	rira-h3.2.1 [sm-6.2.1]	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	completed					Task completed by Forys et al. 1995 and Goodyear 1995 studies.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
2	rira-h3.2.2	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of silver rice rats.	2-3 years	FWS, universities	30	30	30	Based on PVA for rice rat, which is not yet complete. Upcoming TAMU rangewide trapping survey will provide a framework.
2	rira-h4.0	Monitor the status of silver rice rat habitat, particularly critical habitat, and examine ecological processes.	continuous	FWS, universities	20	20	20	
3	rira-h5.0 [sm-8.0]	Increase public awareness of silver rice rat habitat, especially critical habitat, and instill stewardship.	continuous	FWS, FWC, FDEP, NGO, private	5	5	5	Refuge visitor center provides information regarding the rice rat.
2	rira-s1.1	Conduct presence/absence surveys to determine the status of rice rats and refine definition of range.	2 years	FWS, universities	35	35		Important TAMU study, including rangewide trapping survey has begun, winter 2004.
3	rira-s1.2	Survey for the presence/absence of black rats simultaneously with rice rat trapping.	2 years	FWS, universities	35	35		TAMU rangewide trapping survey will provide presence-absence data.
3	rira-s1.3	Maintain and improve the GIS database for silver rice rats.	continuous	FWS, FWC, universities	3	3	3	

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	rira-s2.1	Assign a biologist responsibility for implementing recovery actions for the threatened or endangered species of the Lower Keys.	completed					Biologists currently stationed in Vero Beach Ecological Services office and Big Pine Key suboffice.
3	rira-s2.2.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation and supplementation efforts of silver rice rats using the IUCN/SSC Guidelines for Reintroductions.	1-2 years	FWS, NAS, universities	10	10		
3	rira-s2.2.2	Reintroduce silver rice rats on islands on the periphery of the silver rice rat's range.	1 year	FWS, universities	10			
3	rira-s2.2.3	Reintroduce silver rice rates on Little Pine Key or other remote backcountry islands.	1 year	FWS, universities	10			
3	rira-s2.2.4	Conduct reinforcement/supplementation of silver rice rats.	1 year	FWS, universities	10			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	rira-s2.3	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	rira-s2.4	Provide information about silver rice rats to Federal, State, county, and city agencies. Distribute information regarding the presence of silver rice rats, their protection under the ESA, and ways to minimize impacts.	continuous	FWS, FWC, FDEP, NGO, private	3	3	3	
2	rira-s2.5.1	Minimize cat predation on silver rice rats.	continuous	FWS, FWC, FDEP, NAS, private	5	5	5	No systematic effort to control feral and free-range domestic cats is presently in place.
3	rira-s2.5.2	Minimize competition and predation by black rats.	continuous	FWS, FWC, FDEP, NAS, private	4	4	4	No systematic effort to control black rats is presently in place.
3	rira-s2.5.3	Minimize raccoon impacts on silver rice rats.	continuous	FWS, FWC, FDEP, NAS, private	2	2	2	No systematic effort to control raccoons is presently in place.
3	rira-s2.5.4	Eliminate fire ant colonies near rice rat habitat.	continuous	FWS, FWC, FDEP, NAS, private	1	1	1	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	rira-s2.5.5	Control blatant killing and prevent poisoning.	continuous	FWS, FWC, NAS				Although not a documented problem, task is currently enforced and cost is included in responsible agency's budget.
3	rira-s2.6	Investigate captive propagation options.	3-5 years	FWS, FWC, universities, private	1	1	1	TAMU rangewide trapping survey will provide a framework for evaluating captive propagation needs.
3	rira-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	3-5 years	FWS, universities	50	50	50	
3	rira-s3.2	Examine the effect of resource limitation on the persistence of the silver rice rat.	2-3 years	FWS, NAS, universities	35	35	35	
3	rira-s3.3	Examine factors that affect the abundance and distribution of the silver rice rat.	3-5 years	FWS, NAS, universities	50	50	50	
2	rira-s3.4.1	Identify subpopulations vulnerable to extinction.	2 years	FWS, NAS, universities	20	20		

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	rira-s3.4.2	Determine the necessary number of subpopulations and level of exchange that will enable the silver rice rat to persist for 100 years.	2-3 years	FWS, universities	30	30	30	Population viability analysis (PVA) for rice rat will be difficult; not complete as of early 2004.
3	rira-s3.5	Determine a stable age structure, sex ratio, and group size for the silver rice rat.	2-3 years	FWS, universities	30	30	30	PVA for rice not complete as of early 2004.
3	rira-s3.6	Conduct a silver rice rat reintroduction and evaluate its effectiveness in increasing the rats' persistence.	2-3 years	FWS, universities	15	15	15	
3	rira-s4.1	Develop methods to monitor demographic parameters.	continuous	FWS, universities	15	15	15	Upcoming TAMU rangewide trapping survey will provide some of the necessary data for this task.
2	rira-s4.2	Conduct long-term monitoring of the silver rice rat.	continuous	FWS, universities	10	10	10	
3	riras5.1	Prepare educational material for the general public.	continuous	FWS, FWC, FDEP, private	5	5	5	Refuge visitor center provides information regarding the rice rat.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	rira-s5.2	Develop and implement a cat, black rat, and raccoon control program.	continuous	FWS, FWC, FDEP, NAS, private	5	5	5	No program to educate residents on the necessity of controlling feral and free-range domestic cats, black rats, and raccoons is presently in place.

Dry Prairie Implementation

fgsp = Florida grasshopper sparrow **h = habitat task** **dp = dry prairie**

acca = Audubon's crested caracara **s = species task**

					Cost ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
2	acca-h1.1.1	Encourage the purchase of unprotected lands that support Audubon's crested caracaras.	continuous	FWS, FWC, FDEP, WMD				Cost dependent upon specific site and amount of land acquired.
3	acca-h1.1.2	Use conservation easements and other non fee-title ownership options to maintain habitat.	continuous	FWS, FWC, WMD, FDEP, NGO				Cost dependent upon terms of agreement entered into with landowner.
1	acca-h1.1.3 [dp-6.2]	Encourage landowners to maintain habitat for acca and other prairie species.	continuous	FWS, FDEP, FWC, WMD, NRCS	1	1	1	
2	acca-h1.1.4	Maintain and enhance habitat on acquired lands or lands under easement/agreement.	continuous	FWS, FDEP, FWC, WMD, NPS	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being maintained.
2	acca-h1.2.1 [dp-2.8, 3.1, 3.2]	Conduct prescribed burns at periodic intervals.	continuous	FWS, FDEP, FWC, NPS, USAF, DOF, private	.02/acre	.02/acre	.02/acre	Total cost dependent upon number of acres burned.

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	acca-h1.2.2 [dp-3.1, 3.2]	Maintain pastures in native vegetation to the extent possible.	continuous	FWS, FDEP, FWC, NPS, USAF, DOF				Task is currently implemented on public lands and cost is included in managing agency's budget.
3	acca-h1.2.3	Do not allow reforestation of prairies.	continuous	FWS, FDEP, FWC, NPS, USAF, DOF				Task is currently implemented on public lands and cost is included in managing agency's budget.
3	acca-h1.2.4 [dp-3.2]	Establish appropriate burn seasonality.	1-2 years	FWS, FDEP, FWC, NPS, USAF, DOF, private	30	30		
3	acca-h2.1	Expand acca habitat in occupied areas.	continuous	FWS, FDEP, FWS, NPS, USAF, DOF, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres being enhanced.
3	acca-h2.2 [dp-4.0]	Restore habitat in currently unoccupied areas.	continuous	FWS, FWC, FDEP, WMD, NPS	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being restored.
3	acca-h3.1	Determine why certain acca habitat areas are not used.	2 to 3 years	FWS, FWC, universities, USAF, NPS	35	35	35	
3	acca-h3.2	Determine which elements to modify to make unused areas suitable for acca.	2 to 3 years	FWS, FWC, universities, USAF, NPS	40	40	40	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	acca-h4.0	Use satellite and aerial photos to monitor land use changes in the core of the acca population.	continuous	FWS, FWC, NPS, universities, USAF, USGS	5	5	5	
3	acca-h5.0 [dp-6.1, 6.3]	Inform the public.	continuous	FWS, FWC, FDEP, USAF, NGO	10	5	5	
2	acca-s1.1	Locate active acca territories in Glades, DeSoto, Highlands, Okeechobee, and Osceola Counties.	continuous	FWS, FDEP, FWC, NPS, WMD, USAF, universities	20	20	20	
3	acca-s1.2 [dp-1.3]	Locate and map acca potential habitat that can be restored for reintroductions.	continuous	FWS, FWC, NPS, FDEP, WMD, USAF, USGS	20	20	20	
2	acca-s1.3	Develop standardized, systematic censusing procedures.	completed					See document titled "Recommended Management Practices and Survey Protocols for Audubon's Crested Caracara (Caracara cheriway audubonii) in Florida."

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	acca-s2.1.1	Inform landowners of presence of acca on their property.	continuous	FWS, COE, FDEP, FWC, NPS, WMD, USAF	1	1	1	
1	acca-s2.1.2	Encourage landowners to protect acca and their nesting sites by providing incentives.	continuous	FWS, FWC, NRCS				Cost dependent upon incentives awarded.
3	acca-s2.2	Develop and implement a plan to reintroduce acca into suitable historic habitat.	3-5 years	FWS, FWC, USAF, NPS, FDEP, WMD, universities	60	60	60	
3	acca-s2.3	Encourage natural colonization of restored habitats by acca.	continuous	FWS, FWC, WMD, COE, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	acca-s2.4	Introduce rehabilitated caracaras into expanded/restored areas whenever possible.	continuous	FWS, FWC, NPS	20	20	20	
3	acca-s2.5.1	Develop an emergency program for removing sick or injured acca from the wild.	3-5 years	FWS, FWC, private, universities, NGO	40	40	40	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
3	acca-s2.5.2	Establish an acca rehabilitation team.	3 years	FWS, FWC, private, universities, NGO	5	5	5	
3	acca-s2.5.3	Maintain accurate records on acca in rehabilitation.	continuous	FWS, FWC, private, universities, NGO	1	1	1	
3	acca-s2.5.4	Determine where recovered acca should be released into the wild.	continuous	FWS, FWC, private, universities, NGO, NPS, USAF	20	20	20	
3	acca-s2.5.5	Monitor the health and status of rehabilitated acca.	continuous	FWS, FWC, universities, NGO, NPS	30	30	30	
2	acca-s2.5.6	Conduct section 7 consultations on all Federal actions that may affect caracaras and their habitat.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
1	acca-s3.1.1 [dp-2.7, 5.1-5.3]	Determine essential habitat components for acca.	3-5 years	FWS, NGO, FWC, NPS, WMD, universities, USAF, USGS/BRD	35	35	35	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
1	acca-s3.1.2	Determine minimum amount of nesting/feeding habitat needed to support an acca population.	3-5 years	FWS, FWC, universities, USAF, NPS	30	30	30	
3	acca-s3.1.3	Formulate estimate of habitat carrying capacity under optimum conditions.	5 years	FWS, FWC, universities, USAF, NPS	30	30	30	
1	acca-s3.1.4	Establish habitat management guidelines to protect nests and nesting pairs of acca.	completed					See document titled "Recommended Management Practices and Survey Protocols for Audubon's Crested Caracara (Caracara cheriway audubonii) in Florida."
2	acca-s3.1.5	Use information and conduct research to develop a Population Viability Analysis for acca.	2-3 years	FWS, FWC, universities	35	35	35	
3	acca-s3.2	Compile acca data into a central database at one location.	continuous	FWS, FWC, universities	5	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	acca-s4.1	Develop monitoring protocols and techniques for acca.	3-5 years	FWS, FWC, NPS, universities, USAF, USGS/BRD	15	15	15	
2	acca-s4.2	Monitor acca on public lands to evaluate management actions.	continuous	FWS, FWC, NPS, WMD, USAF, USGS/BRD, COE	25	25	25	
3	acca-s4.3	Monitor the success of reintroduced acca.	continuous	FWS, NGO, FWC, NPS, WMD, universities, USAF, USGS/BRD	20	20	20	
3	acca-s5.0 [dp-6.1, 6.3]	Increase public awareness of the biology, ecology, status, and trends of the acca.	continuous	FWS, FWC, NGO, NRDC, WMD, USAF	10	5	5	
2	fgsp-h1.1.1 [dp-2.1, 2.4, 3.2, 3.3]	Maintain and enhance Florida grasshopper sparrow habitat on acquired lands or lands under conservation easement or agreement.	continuous	FWS, FWC, USAF, FDEP, WMD, NPS	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being maintained.

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	fgsp-h1.1.2 [dp-2.1, 2.5, 2.6]	Encourage purchase of lands to protect fgsp.	continuous	FWS, FDEP, FWC, WMD				Cost dependent upon specific site and amount of land acquired.
2	fgsp-h1.1.3 [dp-2.2, 3.4]	Discourage changes in present level of cattle grazing where conducive to fgsp.	continuous	FWS, FDEP, FWC, tribes	1	1	1	Cost may increase if incentives are provided.
1	fgsp-h1.2.1 [dp-2.8, 3.1, 3.2]	Continue prescribed burns at periodic intervals.	continuous	FWS, FDEP, FWC, USAF, private	.02/acre	.02/acre	.02/acre	Total cost dependent upon number of acres burned.
2	fgsp-h1.2.2 [dp-3.1, 3.2]	Maintain pastures in native vegetation to the extent possible.	continuous	FWS, FDEP, FWC, USAF				Task currently implemented on public lands and cost is included in managing agency's budget.
2	fgsp-h1.2.3	Do not allow reforestation of prairies.	continuous	FWS, FDEP, FWC, USAF				Task currently implemented on public lands and cost is included in managing agency's budget.
2	fgsp-h1.2.4 [dp-3.2]	Establish appropriate burn seasonality.	1-2 years	FWS, FDEP, FWC, USAF, NPS, DOF, private	30	30		

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	fgsp-h1.2.5 [dp-2.4]	Avoid construction of fences or other structures in fgsp habitat.	continuous	FWS, FDEP, FWC, USAF				Task currently implemented on public lands and cost is included in managing agency's budget.
2	fgsp-h1.2.6 [dp-2.4 3.2]	Avoid land management and maintenance activities during fgsp nesting.	continuous	FWS, FDEP, FWC, USAF, COE				Task currently implemented on public lands and cost is included in managing agency's budget.
2	fgsp-h1.3	Conduct section 7 consultations on all Federal activities that might affect grasshopper sparrows and their habitat.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	fgsp-h2.1 [dp-1.3]	Identify areas of suitable unoccupied habitat for fgsp.	3 years	FWS, FWC, USAF, USGS, FDEP	25	25	25	
3	fgsp-h2.2 [dp-4.0]	Restore selected areas for fgsp as needed.	continuous	FWS, FWC, USAF, WMD, COE, NPS	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being restored.
3	fgsp-h2.3	Expand fgsp habitat in occupied areas, locate and restore habitat in unoccupied areas.	continuous	FWS, NGO, FWC, USAF, COE	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being restored.

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	fgsp-h3.0 [dp-2.7, 5.1-5.4]	Continue research on fgsp/habitat interactions.	continuous	FWS, FDEP, NGO, FWC, tribes, universities, USGS/BRD, USAF	35	35	35	
1	fgsp-s1.0 [dp-1.1, 1.2]	Determine the distribution and abundance of fgsp.	3 years	FWS, NGO, FDEP, FWC, tribes, WMD, USAF	30	30	30	
3	fgsp-s2.1	Encourage natural colonization of restored habitat by fgsp.	continuous	FWS, NGO, FWC, USAF, WMD, COE	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	fgsp-s2.2	Develop and implement a plan to reintroduce fgsp into historic habitat in the Kissimmee River Valley.	continuous	FWS, FWC, universities	60	60	60	
3	fgsp-s2.3	Develop and implement, as warranted, a captive propagation plan for fgsp.	3-5 years	FWS, FWC, universities	150	75	75	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
2	fgsp-s3.1 [dp-3.5]	Develop information on fgsp's biology, including genetic/ecological studies.	continuous	FWS, FDEP, NGO, FWC, tribes, universities, USGS/BRD, USAF	60	60	60	
2	fgsp-s3.2	Continue winter ecology studies of fgsp.	3 years	FWS, FWC, universities	25	25	25	
2	fgsp-s3.3	Develop a reserve design for fgsp.	2-3 years	FWS, FWC, universities	30	30	30	
2	fgsp-s4.1	Develop consistent survey/census protocols and evaluate and assure continuation/ consistency of ongoing monitoring protocols.	2-3 years	FWS, FWC, universities, USAF, USGS/BRD	15	15	15	
2	fgsp-s4.2 [dp-3.5, 3.6]	Monitor fgsp on public land to evaluate management actions.	continuous	FWS, NGO, FDEP, FWC, tribes, universities, USAF, USGS/BRD	65	65	65	

Priority	Task Number	Task Description	Task Duration	Participants	Cost ($1,000s) FY 1	FY 2	FY 3	Comments
3	fgsp-s4.3 [dp-3.5]	Monitor the success of reintroduced fgsp.	continuous	FWS, NGO, FDEP, FWC, tribes, universities, USAF, USGS/BRD	25	25	25	
3	fgsp-s5.0 [dp-6.1, 6.3]	Increase public awareness of and provide information on the biology, ecology, and status of the fgsp.	continuous	FWS, FDEP, FWC, NGO, WMD, USAF	10	5	5	

Freshwater Marsh Wet Prairie Implementation

csss = Cape Sable seaside **cuok = Okeechobee gourd** **h = habitat task**

eski = Everglade snail kite **fm = freshwater marsh/wet prairie** **s = species task**

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	csss-h1.1	Review the effects of hydrological restoration in Everglades, Big Cypress, and Southern Glades WEA and make appropriate management decisions.	continuous	FWS, NPS, FWC, WMD, COE	70	70	70	Cape Sable seaside sparrow
3	csss-h1.2	Develop detailed maps of csss habitat.	completed	FWS, universities, NPS, COE, USGS	10	10	10	
1	csss-h1.3	Monitor changes in habitat as a result of changes in hydrologic regimes and fire events.	continuous	FWS, FWC, NPS, COE, WMD	60	60	60	
2	csss-h1.4 [fm-1.2, 1.3]	Determine necessary management practices to maintain or restore csss habitat.		FWS, NPS, WMD, COE, FWC	50	50	50	
3	csss-h2.1	Define the constituent elements of critical habitat for csss.	3-5 years	FWS, FWC, NPS, DERM	60	60	60	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	csss-h2.2 [fm-1.2, 1.3]	Establish and implement the appropriate hydrologic regimes necessary to support Cape Sable seaside sparrows.	continuous	FWS, COE, NGO, FWC, tribes, NPS, universities, USGS/BRD, WMD	25000	25000	25000	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
1	csss-h2.3 [fm-1.2, 1.3]	Establish and implement the appropriate fire management necessary to support csss.	continuous	FWS, NPS, WMD, FWC, FDEP, private	.05/acre	.05/acre	.05/acre	Total cost dependent upon number of acres burned.
2	csss-h2.4 [fm-1.2, 1.3, 3.0]	Remove woody species and/or exotics from disturbed habitats previously used by csss.	continuous	FWS, NPS, WMD, FWC, FDEP	3/acre	3/acre	3/acre	Total cost dependent upon number of acres being managed.
3	csss-h3.1	Conduct a quantitative study to better understand changes in dominant plant species that have occurred within the csss breeding habitat in response to local hydrological conditions.	3-5 years	FWS, FWC, FDEP, NGO, universities	70	70	70	
3	csss-h3.2 [fm-1.2, 1.3]	Implement study to determine the factors that regulate woody plant growth and colonization in short-hydroperiod prairies.	3 years	FWS, NPS, FWC, universities	50	50	50	
3	csss-h3.3	Develop methods to manipulate vegetative communities.	2-3 years	FWS, NPS, FWC, universities	20	20	20	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	csss-h3.4	Determine the effects of altered hydrologic patterns on the fire frequency of marl prairies.	3-5 years	FWS, NPS, FWC, COE, WMD, universities	50	50	50	
2	csss-h3.5	Continue research on the effects of fire frequency on Cape Sable seaside sparrow habitat use.	2-3 years	FWS, NPS, USGS/BRD, universities	80	80	80	
2	csss-h4.0	Monitor Cape Sable seaside sparrow habitat by implementing a long-term vegetation monitoring program.	10-15 years	FWS, NPS, FWC, universities	50	50	50	
3	csss-h5.0 [fm-2.2]	Increase public awareness about short-hydroperiod marl prairies and their key role in the Everglades ecosystem.	continuous	FWS, FWC, NPS, NGO, USGS/BRD	5	5	5	
2	csss-s1.1	Continue and expand distribution surveys.	continuous	FWS, COE, FWC, NPS	65	65	65	
3	csss-s1.2	Incorporate wintering ecology studies on csss habitat use into a GIS database.	completed					
3	csss-s1.3	Review and revise critical habitat designation for csss.	3-5 years	FWS, FWC, NPS, DERM	60	60	60	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	csss-s1.4	Survey habitat components of occupied and unoccupied habitat to determine why csss is absent from some areas.		FWS, NPS	75	75	75	
1	csss-s2.1 [fm-1.2, 1.3]	Develop or establish and implement the appropriate water management regimes to protect csss in Everglades NP, Big Cypress National Preserve, and the Southern Glades Wildlife and Environmental Area.	5-10 years	FWS, COE, NGO, FWC, tribes, NPS, universities, USGS/BRD, WMD	25000	25000	25000	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
2	csss-s2.2	Conduct section 7 consultations on Federal activities that may affect Cape Sable seaside sparrows.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	csss-s2.3	Develop and implement Reasonable and Prudent Alternatives to avoid the likelihood of jeopardy.	continuous	FWS, COE, counties, FWC, NPS, tribes, WMD	40	40	40	
1	csss-s3.1	Recover the core subpopulation west of Shark River Slough.	10 years	FWS, WMD, NPS	150	150	150	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	csss-s3.2	Recover East Everglades-Taylor Slough subpopulations to levels consistent with restored hydropatterns.		FWS, COE, NPS, WMD	100	100	100	
3	csss-s3.3 [fm-1.3]	Restore disturbed habitats identified as potential Cape Sable seaside sparrow, creating opportunities for recolonization of former habitat.	continuous	FWS, NPS, WMD, COE, FDEP, private	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being restored.
3	csss-s3.4.1.1	Determine the sub-population levels that will trigger translocation.	2-3 years	FWS, FWC, NPS, USGS/BRD, universities	50	50	50	
3	csss-s3.4.1.2	Determine the sub-population levels at which the removal of individuals from the donor site has minimal risk.	2-3 years	FWS, FWC, NPS, USGS/BRD, universities	50	50	50	
3	csss-s3.4.1.3	Determine whether translocated individuals must have a specific age structure to be successful.	2-3 years	FWS, FWC, NPS, USGS/BRD, universities	50	50	50	
3	csss-s3.4.2	Identify recipient sites for translocated csss.	2 years	FWS, FWC, NPS, USGS/BRD, universities	30	30		

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	csss-s3.5.1	Develop a protocol for controlled propagation of csss.	3-5 years	FWS, FWC, NPS, universities	100	75	75	
3	csss-s3.5.2	Review propagation protocol developed for the Dusky seaside sparrow, identify weaknesses, and make appropriate changes for the Cape Sable seaside sparrow.	2 years	FWS, FWC, NPS, universities	50	50		
3	csss-s3.5.3	Develop a genetic management plan for csss.	3-5 years	FWS, NPS, USGS/BRD, universities, FWC	100	75	75	
3	csss-s4.1.1	Identify all areas that provide habitat for all life stages of csss.	completed					
3	csss-s4.1.2	Determine seasonal movement patterns and colonizing ability.	3-5 years	FWS, NGO, FWC, NPS, universities, USGS/BRD	90	90	90	
2	csss-s4.2	Better define the habitat requirements of csss.	3-5 years	FWS, FWC, NPS, NGO, USGS/BRD, universities	60	60	60	
3	csss-s4.3	Determine age-specific survivorship of csss.	2 years	FWS, NPS, FWC, universities	50	50		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	csss-s4.4	Determine age-specific fecundity of csss.	2 years	FWS, NPS, FWC, universities	50	50		
2	csss-s4.5	Research predation rates and how other factors influence predation for csss.	3-5 years	FWS, NPS, FWC, universities	60	60	60	
2	csss-s4.6 [fm-1.4]	Continue development of population models for the csss.	2-3 years	FWS, NPS, USGS, FWC, universities	30	30		
1	csss-s5.0	Monitor Cape Sable seaside sparrow sub-populations to assure that further declines in range and numbers do not occur and that recovery actions are being implemented and are effective.	continuous	FWS, NPS, FWC, NGO, universities	30	30	30	
3	csss-s6.0 [fm-2.2]	Increase public awareness of csss and its habitat.	continuous	FWS, COE, FWC, NGO, NPS, WMD	10	5	5	
1	cuok-h1.1 [fm-1.2, 1.3, 1.6]	Determine water regulation practices that promote recovery of cuok, assess the implications on an ecosystem-wide scale, and make recommendations to water managers.	5-10 years	FWS, WMD, NGO, COE, FWC	50	50	50	Okeechobee gourd (Cucurbita okeechobeensis)

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
2	cuok-h1.2 .[fm-1.2, 1.3, 3.0]	Control or remove exotic vegetation in wetlands in a manner that will avoid impacts to cuok.	continuous	FWS, WMD, FWC, NPS, FDEP	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
3	cuok-h1.3 [fm-1.2, 1.3, 3.0]	Plant native trees or shrubs to replace exotics.	continuous	FWS, WMD, FWC, NPS, NGO	10/acre	10/acre	10/acre	Total cost dependent upon number of acres being restored.
2	cuok-h1.4 [fm-1.2, 1.3]	Use controlled burns to open up areas of overly dense vegetation in lake littoral zones and marshes.	continuous	FWS, WMD, FWC, NPS, FDEP, private	.03/acre	.03/acre	.03/acre	Total cost dependent upon number of acres burned.
2	cuok-h1.5 [fm-1.2, 1.3, 2.1]	Prevent cultural eutrophication of lakes and marshes.	continuous	FWS, WMD, FWC, NPS, FDEP, EPA, COE	5000	5000	5000	
2	cuok-h2.1 [fm-1.2, 1.3]	Ensure that habitat needs of cuok are incorporated into restoration of Kreamer, Torrey, and Ritta Islands.		FWS, WMD, COE				Task currently implemented and cost is included in managing agency's budget.
3	cuok-h2.2	Coordinate translocation plans for cuok with the Kissimmee River restoration activities.		FWS, WMD, COE				Task currently implemented and cost is included in managing agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	cuok-h3.0 [fm-3.0]	Research the acute and long-term tolerance of cuok to herbicides used to control nuisance aquatic vegetation.	1-5 years	FWS, WMD, EPA, private, universities	15	15	15	
2	cuok-h4.0	Monitor habitat and ecological processes to determine effects on cuok.	continuous	FWS, WMD, FWC, COE	40	40	40	
3	cuok-h5.0 [fm-2.2]	Increase public awareness of ecological relationships, environmental stressors, and restoration activities in South Florida.	continuous	FWS, FWC, WMD, COE, NGO	10	5	5	
1	cuok-s1.1	Conduct regularly scheduled surveys for cuok.	continuous	FWS, COE, WMD, NGO, universities	20	15	15	
3	cuok-s1.2	Encourage individuals to provide information on sightings of cuok.	continuous	FWS, WMD, COE	2	2	2	
2	cuok-s2.1 [fm-3.0]	Ensure that spraying to control aquatic vegetation does not impact cuok.	continuous	FWS, WMD, COE	1	1	1	Majority of cost included in WMD and spraying agency's budget.
2	cuok-s2.2 [fm-1.2, 1.3, 3.0]	Assess the effect of Melaleuca and Brazilian pepper control efforts and use techniques to avoid direct impact to cuok.	1-2 years	FWS, WMD, NPS, FWC, USGS/BRD, universities, NGO	15	15		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	cuok-s2.3	Use provisions of section 7 of the ESA to protect cuok.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	cuok-s2.4.1	Establish a protocol for translocation.	2-3 years	FWS, WMD, NPS, FWC, NGO	20	10	10	
2	cuok-s2.4.2	Locate potential translocation sites.	2-3 years	FWS, WMD, NPS, WMD, FWC, NGO	10	10	10	
2	cuok-s2.4.3	Translocate plants to selected sites.	3-5 years	FWS, WMD, NPS, FWC, NGO	15	15	15	
2	cuok-s3.1	Test the viability of cuok seeds submerged for long periods.	3 years	FWS, WMD, NGO	1	1	1	
3	cuok-s3.2	Characterize range of soil conditions where cuok grows and provide detail mapping of soil types in southeastern Lake Okeechobee.	1 year	FWS, WMD, NGO, universities	10			
1	cuok-s3.3	Through field surveys, determine dates of germination under natural conditions.	3 years	FWS, WMD, NGO, universities	20	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cuok-s3.4	Test the effect of seasonally rising water level on the survival of young cuok.	3 years	FWS, WMD, NGO, universities	15	15	15	
1	cuok-s3.5 [fm-1.4]	Conduct population viability and risk assessment studies for cuok.	3 years	FWS, WMD, NGO, universities	30	30	20	
3	cuok-s3.6	Investigate the role of animals in dispersing cuok seeds.	3 years	FWS, WMD, NGO, universities	15	15	15	
2	cuok-s3.7	Document the potential relationship between the American alligator and the cuok.	3 years	FWS, WMD, NGO, universities	15	15	15	
3	cuok-s3.8	Investigate the genetic distance between the two populations of cuok.	1 year	FWS, WMD, NGO, USDA, universities	10			
1	cuok-s4.1	Determine the most effective approach to monitor the condition of cuok and its habitat on an annual basis.	2-3 years	FWS, WMD, NGO	20	15	15	
1	cuok-s4.2	Conduct monitoring on an annual basis.	continuous	FWS, WMD	15	15	15	
3	cuok-s5.0 [fm-2.2]	Increase public awareness of cuok.	continuous	FWS, COE, DOF, FWC, NGO, WMD	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	eski-h1.1 [fm-1.2, 1.3]	Plan/carry out periodic drawdowns of lakes on a rotational basis in the Kissimmee Chain of Lakes.	continuous	FWS, COE, WMD, FWS	200	200	200	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
2	eski-h1.2 [fm-1.2, 1.3, 3.0]	Control or remove exotic vegetation in wetlands.	continuous	FWS, COE, FDACS, FDEP, FWC, NPS, WMD	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
2	eski-h1.3 [fm-1.2, 1.3]	Use controlled burns to open up areas of overly dense vegetation in lake littoral zones and marshes.	continuous	FWS, WMD, FWC, FDEP, private	.03/acre	.03/acre	.03/acre	Total cost dependent upon number of acres burned.
2	eski-h1.4	Ensure that information on wetlands of importance for eski nesting and feeding is considered in review of regulatory permits.	continuous	FWS, COE, counties, FWC, NPS, tribes, WMD				Cost included in standard operating procedures of reviewing agency's budget.
2	eski-h1.5 [fm-1.2, 1.3, 2.1]	Prevent cultural eutrophication of lakes and marshes.	continuous	FWS, WMD, FWC, NPS, FDEP, EPA				
2	eski-h1.6	Evaluate effects of Lake Okeechobee's regulation schedule on eski habitat.	5-10 years	FWS, WMD, COE	45	45	45	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	eski-h2.1 [fm-1.2, 1.3, 2.1]	Reverse the expansion of cattails in portions of the Everglades.	continuous	FWS, NPS, FWC, WMD, EPA, COE, FDEP	60	60	60	
2	eski-h2.2 [fm-1.2, 1.3]	Construct and operate the Modified Water Deliveries to Everglades National Park and C-111 projects.	5-10 years	FWS, WMD, COE, NPS	25000	25000	25000	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
2	eski-h2.3 [fm-1.2, 1.3, 1.5]	Investigate, plan, and carry out restoration projects for eski in the Kissimmee, Okeechobee, and Everglades watershed.	10-20 years	FWS, WMD, COE, FWC, tribes, private	10000	10000	10000	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
2	eski-h3.1 [fm-1.4]	Conduct and use ATLSS model for eski to predict the response of eski to changes in hydropattern for specific water management proposals.	2-3 years	FWS, USGS, FWC, universities	30	30	30	
1	eski-h3.2	Continue and expand research on the effects of natural and human-caused hydrologic events on the ecology of the apple snail.	3-5 years	FWS, FWC, WMD, universities	50	30	30	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	eski-h3.3 [fm-1.4]	Evaluate long-term climate predictions to reduce likelihood of coincidence of human-caused drawdown and drought.	continuous	FWS, WMD				Negligible cost because task implemented through managing agency's correspondence with climatologists.
3	eski-h3.4 [fm-1.4]	Perform analysis of rainfall records throughout central and South Florida to identify the intensity and spatial and temporal extent of droughts.	completed					
2	eski-h3.5 [fm -1.2, 1.3, 2.1]	Evaluate need for secondary treatment in addition to nutrient removal by stormwater treatment areas.		FWS, WMD, FDEP, universities, FWC	500	500	500	
2	eski-h4.0	Monitor eski habitat and ecological processes.	continuous	FWS, COE, EPA, FWC, NGO, NPS, WMD, universities, USGS/BRD	60	60	60	
3	eski-h5.0 [fm-2.2]	Increase public awareness of ecological relationships, environmental stressors, and restoration activities in South Florida.	continuous	FWS, FWC, WMD, NGO, NPS, COE, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	eski-s1.1	Estimate population size and survival, through mark/resighting of banded eski.	completed					
1	eski-s1.2	Continue surveys of nesting effort and breeding success of eski.	continuous	FWS, COE, NGO, FWC, NPS, WMD, tribes, universities	80	80	80	
2	eski-s1.3	Expand and refine existing information on movements and distribution of eski, particularly related to drought.	continuous	FWS, FWC, USGS/BRD, universities	80	80	80	
3	eski-s1.4	Organize and maintain a network of biologists to report eski sightings.	continuous	FWS, FWC, NPS, NGO, COE	10	10	10	
3	eski-s2.1	Update critical habitat for eski.	3 years	FWS, FWC, NPS, NGO, COE, universities	15	15	15	
2	eski-s2.2	Use provisions of section 7 of the ESA to protect eski.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	eski-s3.1	Expand information on survival of juvenile and adult eski.	3 yrs	FWS, FWC, universities	80	80	80	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	eski-s3.2 [fm-1.4]	Develop and validate a model that can evaluate natural and human-caused changes to eski habitat throughout its range.	2-3 years	FWS, COE, EPA, FWC, NGO, WMD, universities, USGS	30	30	30	
3	eski-s3.3	Investigate genetic variability of eski.	completed					
1	eski-s4.1	Monitor population size and survival over time through long-term mark/resighting of banded eski.	continuous	FWS, FWC, NGO, universities	60	60	60	
2	eski-s4.2 [fm-2.1]	Monitor contaminants in eski and apple snails.	continuous	FWS, FDEP, EPA, universities	40	40	40	
3	eski-s5.0 [fm-2.2]	Increase public awareness of eski.	continuous	FWS, COE, counties, FWC, NGO, tribes, universities, WMD, private	10	5	5	

Tropical Hardwood Hammock Implementation

klcm = Key Largo cotton mouse | **piro = Key tree-cactus** | **sits = Stock Island tree snail** | **h = habitat task**

klwr = Key Largo woodrat | **ssbu = Schaus swallowtail butterfly** | **thh = tropical hardwood hammock** | **s = species task**

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
	klcm-h1.1.1 [thh-1.1]	Continue Federal acquisition efforts.	completed					Key Largo cotton mouse
3	klcm-h1.1.2 [thh-1.1]	Support State, local and non-governmental organizations' acquisition efforts.	continuous	FWS, FWC, NGO, private				Cost dependent upon specific site and amount of land acquired.
2	klcm-h1.2.1 [thh-1.2-1.3]	Protect cotton mice on private lands through acquisition, conservation easements, or agreements, and informing landowners.	continuous	FWS, FDEP, DOT, counties, private				Cost dependent upon type of protection provided.
2	klcm-h1.2.2 [thh-1.3]	Protect cotton mice on public lands.	continuous	FWS, FDEP, DOT, counties				Cost dependent upon type of protection provided.
2	klcm-h1.2.3 [thh-1.4]	Coordinate with Federal, State and Monroe County agencies and private entities to develop management actions to protect cotton mouse habitat.	continuous	FWS, FDEP, NGO, counties	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	klcm-h1.2.4	Avoid clearing or disturbing hammocks.	continuous	FWS, FDEP, DOT, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	klcm-h1.2.5	Restrict access to cotton mouse habitat.	continuous	FWS, FWC, counties				No cost assigned to this task because access limitations are already enforced. Cost is included in responsible agency's budget.
3	klcm-h1.2.6	Establish and protect 500-m buffers around Priority 1 habitat.	continuous	FWS, FWC, counties				Cost dependent upon specific site, amount of land acquired, and type of protection provided.
3	klcm-h1.2.7 [thh-2.2]	Prevent fires.	continuous	FWS, FDEP, DOT, counties				Task currently enforced and cost is included in responsible agency's budget.
2	klcm-h1.2.8 [thh-2.4]	Eliminate exotic vegetation.	continuous	FWS, FDEP, DOT, counties	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
3	klcm-h2.1	Prepare a hardwood hammock restoration plan for north Key Largo.	1-2 years	FWS, FWC, counties	12	12		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klcm-h2.2	Restore cotton mouse habitat on refuge property.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	klcm-h2.3	Restore old CR 905 Road to promote cotton mouse habitat.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	klcm-h2.4	Remove trash and debris.	continuous	FWS, FDEP, DOT, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	klcm-h2.5 [thh-2.3]	Improve hydrology and water quality in cotton mouse habitat.	completed	FWS, WMD, COE			35	Dispatch Slough has been restored; no other projects identified
3	klcm-h2.6 [thh-2.7]	Improve habitat by planting or encouraging native plant species.	continuous	FWS, FDEP, DOT, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	klcm-h2.7 [thh-4.1]	Create habitat by refilling and recreating areas that have been dredged or altered.	continuous	FWS, FDEP, DOT, counties	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres being created for habitat.
3	klcm-h3.1.1 [thh-7.0]	Investigate stable home range and minimum area requirements.	2 years	FWS, universities	30	30		See 2000 Chris Sasso study, University of Miami; further work desirable in coordination with Key Largo woodrat.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klcm-h3.1.2	Investigate the effect of habitat change.	2-3 years	FWS, universities	25	25	25	
3	klcm-h3.2.1	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	2-3 years	FWS, universities	20	20	20	See 2000 Chris Sasso study, University of Miami.
2	klcm-h3.2.2	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of cotton mice.	2 years	FWS, universities	25	25		FWS radio-tracking project starting in 2002 at CLNWR will address this.
3	klcm-h4.0 [thh-8.0]	Monitor the status of cotton mouse habitat and examine ecological processes.	continuous	FWS, universities	10	10	10	
3	klcm-h5.0 [thh-9.0]	Increase public awareness of cotton mouse habitat and instill stewardship.	continuous	FWS, FDEP, NGO, counties	10	5	5	
2	klcm-s1.1	Conduct presence/absence surveys on north Key Largo.	1-2 years	FWS, FWC, universities	5	5		Trapping by USFWS staff has shown presence at 9 sites. No comparative abundance estimates are available.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	klcm-s1.2	Survey suitable areas in other parts of Key Largo for the presence of cotton mice.	1-2 years	FWS, FDEP, counties, universities	5	5		
2	klcm-s1.3	Determine the status of cotton mouse north of Key Largo.	1-2 years	FWS, universities	10	10		
3	klcm-s1.4	Survey cotton mouse habitat.	3 years	FWS, universities	20	20	20	Ongoing activity at CLNWR.
3	klcm-s1.5	Survey for the presence/absence of black rats simultaneously with the cotton mice surveys.	3 years	FWS, universities	10	10	10	Ongoing activity at CLNWR.
3	klcm-s1.6	Maintain and improve the GIS database for cotton mouse information.	continuous	FWS, FWC	3	3	3	
3	klcm-s2.1	Assign a biologist's responsibility for implementing recovery actions for the threatened or endangered species of the upper Florida Keys.	completed					ES recovery biologists are present in Vero Beach office and Big Pine Key suboffice.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	klcm-s2.2	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	klcm-s2.3	Provide cotton mouse information to State, county, and city agencies, including GIS information regarding the presence of cotton mice, their protection under ESA, and ways to minimize impacts on the mice and their habitat.	continuous	FWS	2	2	2	
3	klcm-s2.4.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation, and supplementation efforts of cotton mice using the IUCN/SSC Guidelines for Reintroductions.	1-2 years	FWS, FDEP, counties, universities	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klcm-s2.4.2	Identify potential release sites.	1 year	FWS, FDEP, counties, universities	4			Unlikely that release sites are available within historic range; sites outside historic range need to be evaluated.
3	klcm-s2.4.3 [thh-2.1-2.7]	Restore or improve habitat where possible to ensure sites are suitable for augmentation/reintroduction.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	klcm-s2.4.4	Identify suitable release stock.	1 year	FWS, FDEP, counties, universities	3			
3	klcm-s2.4.5	Obtain stock for translocation.	1 year	FWS, private	4			
3	klcm-s2.4.6	Release cotton mice into new sites.	2 years	FWS, FDEP, counties, universities	5	5		
3	klcm-s2.4.7	Monitor introduced populations to determine survival, growth, and reproductive success.	continuous	FWS, FDEP, counties, universities	10	10	10	
2	klcm-s2.5.1 [thh-2.4]	Remove nuisance predators.	continuous	FWS, counties	2	2	2	No systematic effort to control predators is presently in place.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klcm-s2.5.2 [thh-2.6]	Minimize the effects of pesticides and other biocides.	continuous	FWS, FDEP, counties				Spraying prohibited in range of cotton mouse on public lands.
3	klcm-s2.5.4	Reduce the effects of road mortality.	continuous	FWS, FDEP, DOT				Cottonmouse roadkills are apparently not a problem at present. Increasing traffic, especially on Old Card Sound Road may lead to an increase in road kills.
3	klcm-s2.5.5 [thh-2.6]	Minimize the effects of contaminants.	continuous	FWS, FDEP, counties				Spraying prohibited in range of cotton mouse on public lands; CLNWR shooting range closed.
3	klcm-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	2-3 years	FWS, universities	25	25	25	
3	klcm-s3.2.1	Identify subpopulations vulnerable to extinction.	completed					Completed as a result of recent work by CLNWR.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klcm-s3.2.2	Determine the necessary number of subpopulations and level of exchange that will enable the cotton mouse to persist for 100 years.	2-3 years	FWS, universities	25	25	25	
3	klcm-s3.3	Determine a stable age structure, sex ratio, and group size for the cotton mouse.	2-3 years	FWS, universities	25	25	25	
3	klcm-s3.4	Examine factors that affect the abundance and distribution of the cotton mouse.	1-2 years	FWS, counties, universities	20	20		
3	klcm-s4.1	Develop methods to monitor demographic parameters.	1-2 years	FWS, counties, universities	12	12		Sex and age structure are part of routine monitoring.
2	klcm-s4.2	Conduct long-term monitoring of the cotton mouse.	continuous	FWS, universities	10	10	10	
3	klcm-s4.3	Monitor sex ratios, age class structure, and survivorship.	continuous	FWS, universities	10	10	10	Sex and age structure are part of routine monitoring.
3	klcm-s5.1	Prepare informational material for the general public.	continuous	FWS, FDEP, NGO, counties	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	klcm-s5.2	Develop and implement a cat, black rat, fire ant, and raccoon control program.	continuous	FWS, FDEP, counties	2	2	2	No systematic effort to control predators is presently in place.
3	klwr-h1.1.1 [thh-1.1]	Continue Federal acquisition efforts.	completed					Key Largo woodrat
3	klwr-h1.1.2 [thh-1.1]	Support State, local and non-governmental organizations' acquisition efforts.	continuous	FWS, FWC, NGO, private				Cost dependent upon specific site and amount of land acquired.
1	klwr-h1.2.1 [thh-1.3]	Protect woodrats on public lands.	continuous	FWS, FDEP, DOT, counties				Cost dependent upon type of protection provided.
2	klwr-h1.2.2 [thh-1.2-1.3]	Protect woodrats on private lands.	continuous	FWS, FDEP, DOT, counties, private				Cost dependent upon type of protection provided.
3	klwr-h1.2.3 [thh-1.4]	Coordinate with Federal, State and Monroe County agencies and private entities to develop management actions to protect woodrat habitat.	continuous	FWS, FDEP, NGO, counties	15	15	15	
1	klwr-h1.2.4	Avoid clearing or disturbing hammocks.	continuous	FWS, FDEP, DOT, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klwr-h1.2.5	Restrict access to woodrat habitat.	continuous	FWS, FWC, counties				Task currently enforced and cost is included in responsible agency's budget.
3	klwr-h1.2.6	Establish and protect 500-m buffers around Priority 1 habitat.	continuous	FWS, FWC, counties				Cost dependent upon specific site, amount of land acquired, and type of protection provided.
3	klwr-h1.2.7 [thh-2.2]	Prevent fires in woodrat habitat.	continuous	FWS, FDEP, DOT, counties				Task currently enforced and cost is included in responsible agency's budget.
3	klwr-h1.2.8 [thh-2.4]	Eliminate exotic vegetation.	continuous	FWS, FDEP, DOT, counties	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
3	klwr-h2.1	Prepare a hardwood hammock restoration plan for north Key Largo.	1-2 years	FWS, FWC, counties	12	12		
2	klwr-h2.2	Restore woodrat habitat on refuge property.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	klwr-h2.3	Restore old 905 Road to promote woodrat habitat.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klwr-h2.4	Remove trash and debris.	continuous	FWS, FDEP, DOT, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	klwr-h2.5 [thh-2.3]	Improve hydrology and water quality in woodrat habitat.	5 years	FWS, WMD, COE	35	35	35	Not a documented problem.
3	klwr-h2.6 [thh-2.7]	Improve habitat by planting or encouraging native plant species.	continuous	FWS, FDEP, DOT, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	klwr-h2.7 [thh-4.1]	Create habitat by refilling and recreating areas that have been dredged or altered.	continuous	FWS, FDEP, DOT, counties	1.5/ acre	1.5/ acre	1.5/ acre	Total cost dependent upon number of acres being created for habitat.
3	klwr-h3.1.1 [thh-7.0]	Investigate stable home range and minimum area requirements.	completed					See 2000 Chris Sasso study, University of Miami.
2	klwr-h3.1.2	Investigate the effect of habitat change.	2-3 years	FWS, universities	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klwr-h3.2.1	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	2-3 years	FWS, universities	20	20	20	See 2000 Chris Sasso study, University of Miami. The entire subspecies is vulnerable to extinction, exposed to secondary effects of the increasing human population elsewhere in the Keys. Black rats, feral cats, and fire ants are problems.
2	klwr-h3.2.2	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of woodrats.	2 years	FWS, universities	25	25		FWS radio-tracking project starting in 2002 at CLNWR will address this.
2	klwr-h4.0 [thh-8.0]	Monitor the status of woodrat habitat and examine ecological processes.	continuous	FWS, universities	10	10	10	
3	klwr-h5.0 [thh-9.0]	Increase public awareness of woodrat habitat and instill stewardship.	continuous	FWS, FDEP, NGO, counties	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	klwr-s1.1	Conduct presence/absence surveys on North Key Largo to determine the status of woodrats.	1-2 years	FWS, FWC, universities	5	5		
3	klwr-s1.2	Survey suitable areas in other parts of Key Largo.	1-2 years	FWS, FDEP, counties, universities	5	5		
2	klwr-s1.3	Determine the status of woodrats north of Key Largo.	1-2 years	FWS, universities	10	10		
3	klwr-s1.4	Survey woodrat habitat.	3 years	FWS, universities	20	20	20	Ongoing activity at CLNWR.
3	klwr-s1.5	Survey for the presence/absence of black rats simultaneously with wood rat surveys.	3 years	FWS, universities	10	10	10	Ongoing activity at CLNWR.
3	klwr-s1.6	Maintain and improve the GIS database for woodrat information.	continuous	FWS, FWC	3	3	3	
2	klwr-s2.1	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	klwr-s2.2	Provide woodrat information to Federal, State, county, and city agencies, including GIS information regarding the presence of woodrats, their protection under the ESA, and ways to minimize impacts.	continuous	FWS	2	2	2	
2	klwr-s2.3.1 [thh-2.4]	Remove nuisance predators.	continuous	FWS, counties	2	2	2	No systematic effort to control predators is presently in place.
3	klwr-s2.3.2 [thh-2.6]	Minimize the effects of pesticides and other biocides.	continuous	FWS, FDEP, counties				Spraying prohibited in range of woodrat on public lands.
3	klwr-s2.3.3	Control blatant killing and poisoning.	continuous	FWS, FWC				Although not a documented problem, task is currently enforced and cost is included in responsible agency's budget.
3	klwr-s2.3.4	Reduce the effects of road mortality.	continuous	FWS, DOT, counties				Not a documented problem.
3	klwr-s2.3.5 [thh-2.6]	Minimize the effects of contaminants.	continuous	FWS, FDEP, counties				Spraying prohibited in range of woodrat on public lands.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	klwr-s2.4.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation, and supplementation efforts of woodrats using the IUCN/SSC Guidelines for Reintroductions.	1-2 years	FWS, FDEP, counties, universities	10	10		
1	klwr-s2.4.2	Identify potential release sites.	1 year	FWS, FDEP, counties, universities	4			Unlikely that release sites are available within historic range; sites outside historic range need to be evaluated.
3	klwr-s2.4.3 [thh-2.1-2.7]	Restore or improve habitat where possible to ensure sites are suitable for augmentation/reintroduction.	continuous	FWS, FDEP, counties	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	klwr-s2.4.4	Identify suitable release stock.	1 year	FWS, FDEP, counties, universities	3			FWS woodrat project planned to start in 2002 will address aspects of captive propagation.
3	klwr-s2.4.5	Obtain stock for translocation.	1 year	FWS	4			Suitable stock available.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klwr-s2.4.6	Release woodrats into new sites.	2 years	FWS, FDEP, counties, universities	5	5		FWS woodrat project planned to start in 2002 will address aspects of captive propagation.
2	klwr-s2.4.7	Monitor introduced populations to determine survival, growth, and reproductive success.	continuous	FWS, FDEP, counties, universities	10	10	10	
1	klwr-s2.5	Investigate captive propagation options.	2-3 years	FWS, private	3	3	3	FWS woodrat project started in 2003 is addressing aspects of captive propagation.
1	klwr-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	2-3 years	FWS, FWC, universities	25	25	25	
3	klwr-s3.2.1	Identify subpopulations vulnerable to extinction.	completed					Completed as a result of recent work by CLNWR.
1	klwr-s3.2.2	Determine the necessary number of subpopulations and level of exchange that will enable woodrat to persist for 100 years.	2-3 years	FWS, universities	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	klwr-s3.3	Determine a stable age structure, sex ratio, and group size for the woodrat.	2-3 years	FWS, universities	25	25	25	
1	klwr-s3.4	Examine factors that affect the abundance and distribution of the woodrat.	1-2 years	FWS, counties, universities	20	20		
1	klwr-s3.5	Conduct an experimental woodrat augmentation/reintroduction and evaluate its effectiveness in increasing the woodrat's persistence.	2-3 years	FWS, FDEP, universities	10	10	10	Planned for Winter, 2002 by FWS/CLNWR.
3	klwr-s4.1	Develop methods to monitor demographic parameters.	1-2 years	FWS, counties, universities	12	12		Sex and age structure are part of routine monitoring.
2	klwr-s4.2	Conduct long-term monitoring of the woodrat.	continuous	FWS, universities	10	10	10	
3	klwr-s5.1	Prepare informational material for the general public.	continuous	FWS, FDEP, NGO, counties	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	klwr-s5.2	Develop and implement a cat, black rat, fire ant, and raccoon control program.	continuous	FWS, FDEP, counties	2	2	2	No systematic effort to control predators is presently in place.
3	piro-h1.1.1 [thh-1.1]	Continue Federal acquisition efforts.	continuous	FWS				Keys tree cactus (Pilosocereus robinii). Cost dependent upon specific site and amount of land acquired.
3	piro-h1.1.2 [thh-1.1]	Support State acquisition efforts.	continuous	FWS, FWC				Cost dependent upon specific site and amount of land acquired.
3	piro-h1.1.3 [thh-1.1]	Support and encourage land acquisition by non-governmental agencies.	continuous	FWS, NGO, private				Cost dependent upon specific site and amount of land acquired.
2	piro-h1.2.1 [thh-1.4]	Prevent detrimental land-use changes within hardwood hammocks.	continuous	FWS, FDEP, counties, private				Task currently implemented on public lands and cost is included in responsible agency's budget.
2	piro-h1.2.2 [thh-1.4]	Prevent land clearing.	continuous	FWS, FDEP, counties, private				Task currently implemented on public lands and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	piro-h1.2.3 [thh-1.4]	Prevent disturbance of surface mining.	continuous	FWS, COE, FDEP, private				Although not a documented problem, task is currently enforced and cost is included in responsible agency's budget.
3	piro-h1.2.4 [thh-1.4]	Prevent subsurface saltwater intrusion.	continuous	FWS, FDEP, COE, counties, WMD				Although not a documented problem, task is currently enforced by prohibiting blasting of channels and cost is included in responsible agency's budget.
3	piro-h1.2.5	Fence or barricade areas.	completed					Completed on public lands, recommend acquisition of remaining parcels for access control.
3	piro-h1.2.6 [thh-2.4]	Remove invasive exotic vegetation.	continuous	FWS, FDEP, counties, private	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
2	piro-h2.1 [thh-2.5]	Eliminate physical degradation of habitat and restore to optimal conditions.	continuous	FWS, counties, COE, FDEP, WMD, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	piro-h2.2 [thh-3.7, 8.0]	Implement management plans for sites including P. robinii and modify as necessary for the species.	continuous	FWS, FWC, FDEP, counties				Cost dependent upon type of plan implemented.
2	piro-h2.3 [thh-3.7, 8.0]	Continue to refine management practices for P. robinii and its habitat.	continuous	FWS, FWC, FDEP, counties	5	5	5	
3	piro-h3.1 [thh-7.0]	Assess important characteristics of P. robinii habitat.	1-2 years	FWS, FDEP, counties, universities	8	8		
3	piro-h3.2.1	Assess the available GIS data.	1-2 years	FWS, FWC, FDEP	2	2		
3	piro-h3.2.2	Create and distribute coverages of population locations.	1-2 years	FWS, FWC, FDEP, universities	2	2		
3	piro-h3.2.3	Acquire recent imageries of the sites.	continuous	FWS, FWC, FDEP	1	1	1	
3	piro-h3.3.1 [thh-7.0]	Evaluate patterns of habitat response to hurricanes and the implications on P. robinii populations.	1-2 years	FWS, universities, FDEP	15	15		The Big Pine Key population was affected by hurricane Georges in 1998, and it would be appropriate to check the population for changes since the initial survey.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	piro-h3.3.2 [thh-7.0]	Investigate the relationships of exotic vegetation.	1-2 years	FWS, universities, FDEP	10	10		
3	piro-h3.4.1	Investigate the historic distribution.	1 year	FWS, FDEP, counties	4			
3	piro-h3.4.2	Determine minimum habitat area required for a stable or increasing population.	1-2 years	FWS, FDEP, counties	15	15		
3	piro-h3.4.3	Determine the amount and configuration of habitat necessary to support a stable or increasing population of P. robinii.	1-2 years	FWS, FDEP, counties	15	15		
3	piro-h4.0 [thh-8.0]	Monitor the status of P. robinii habitat.	continuous	FWS, FWC, FDEP, counties, private	10	10	10	
3	piro-h5.0 [thh-9.0]	Increase public awareness of P. robinii habitat and instill stewardship.	continuous	FWS, FDEP, counties, NGO, FWC	10	5	5	
2	piro-s1.1	Inventory known populations.	continuous	FWS, FDEP, FDACS, FNAI, FWC	4	4	4	
3	piro-s1.2	Search for populations of P. robinii. Resurvey historic locations.	1-2 years	FWS, FDEP, FWC, counties	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	piro-s1.3	Map distribution of known populations and suitable habitat.	continuous	FWS, FWC, FNAI	2	2	2	
1	piro-s2.1	Minimize and eliminate disturbance or mortality to P. robinii.	continuous	FWS, FDEP, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.
2	piro-s2.2	Continue to enforce take prohibitions.	continuous	FWS, FWC, FDEP				Cost included in standard operating budgets of participating agencies.
3	piro-s2.3.1	Maintain ex situ conservation collections of P. robinii.	continuous	FWS, private	2	2	2	
3	piro-s2.3.2	Study feasibility of translocating propagules into historically appropriate and protected natural habitats.	1-2 years	FWS, private	15	15		
3	piro-s2.3.3	Identify potential reintroduction sites.	1 year	FWS, FNAI, FDEP, universities, private	5			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	piro-s2.3.4	Use reintroduction protocols established by the conservation community.	continuous	FWS, FNAI, FDEP, universities, private				Task dependent upon use of protocols by participating agency's.
3	piro-s2.3.5	Monitor the experimental outplantings.	continuous	FWS, FWC, FDEP	5	5	5	
3	piro-s3.1	Study the reproductive biology of P. robinii.	2-3 years	FWS, universities, counties	30	30	30	
3	piro-s3.2	Conduct genetic studies to document genetic variation within and between populations.	2 years	FWS, universities, private	4	4		
3	piro-s3.3	Determine population size and viability of all populations.	2-3 years	FWS, universities, counties	20	20	20	
3	piro-s3.4	Study the response of P. robinii to habitat management treatments.	2-3 years	FWS, FDEP, counties	20	20	20	
3	piro-s3.5	Characterize the habitat and identify suitable sites for experimental outplantings.	1-2 years	FWS, FDEP, counties	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	piro-s4.1	Conduct long-term monitoring of the status of P. robinii.	continuous	FWS, FDEP, FWC, counties	12	12	12	
2	piro-s4.2	Monitor the status of known pollinators.	continuous	FWS, FDEP, FWC, counties	6	6	6	
3	piro-s4.3	Collect and archive existing and historical data.	1-2 years	FWS, counties, universities	5	5		
3	piro-s5.1	Prepare informational material for the general public.	continuous	FWS, FWC, FDEP, NGO, counties	10	5	5	
3	piro-s5.2	Inform Federal and State personnel regarding the presence of P. robinii.	continuous	FWS, FWC, FDEP, counties	2	2	2	
3	sits-h1.1.1 [thh-1.1]	Continue Federal acquisition efforts.	continuous	FWS				Stock Island tree snail. Cost dependent upon specific site and amount of land acquired; suitable habitat acquired in CLNWR and NKDR.
3	sits-h1.1.2 [thh-1.1]	Support State acquisition efforts.	continuous	FWS, FDEP, FWC				Cost dependent upon specific site and amount of land acquired.
3	sits-h1.1.3 [thh-1.1]	Support and encourage land acquisition by non-governmental agencies.	continuous	FWS, NGO, private				Cost dependent upon specific site and amount of land acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	sits-h1.2.1 [thh-1.3]	Protect tree snails on public lands.	continuous	FWS, FDEP, FWC, Key West govt & Bot Garden				Cost dependent upon type of protection provided. Working with Key West Botanical Garden, which is important potential habitat.
2	sits-h1.2.2 [thh-1.2-1.3]	Protect tree snails on private lands where feasible through acquisition, conservation easements, and landowner outreach.	continuous	FWS, private				Cost dependent upon type of protection provided. Landscaping techniques, exotic plant control are important.
2	sits-h1.2.3 [thh-1.3]	Protect important core areas.	continuous	FWS, FDEP, FWC, counties				Cost dependent upon type of protection provided.
3	sits-h1.2.4 [thh-2.4]	Remove invasive exotic vegetation.	continuous	FWS, FDEP, FWC, NPS, counties, private	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
2	sits-h1.2.5	Prevent habitat areas from being modified.	continuous	FWS, FDEP, FWC, NPS, counties, private				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	sits-h1.2.6 [thh-3.5]	Restrict access to snail habitat on public lands.	continuous	FWS, FDEP, FWC, NPS				Task currently implemented on public lands and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	sits-h2.1 [thh-2.5]	Restore both occupied and unoccupied tree snail habitat that has been degraded to optimal conditions.	continuous	FWS, FDEP, FWC, NPS, counties, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	sits-h2.2 [thh-2.7]	Improve habitat by planting or encouraging native plant species.	continuous	FWS, FDEP, FWC, NPS, counties, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	sits-h2.3 [thh-5.1]	Create habitat by refilling and revegetating areas that have been destroyed or altered.	continuous	FWS, FDEP, FWC, NPS, counties, private	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres being created for habitat.
2	sits-h2.4	Restore snail habitat at Key West Botanical Garden.	completed					Completed in 2001.
3	sits-h3.1.1	Determine minimum area required for snails to persist.	1-2 years	FWS, FDEP, private, universities	15	15		
3	sits-h3.1.2	Compare and characterize occupied tree snail habitat.	1-2 years	FWS, FDEP, private, universities	10	10		
3	sits-h3.1.3 [thh-7.0]	Investigate the effect of habitat change on the snail's persistence.	2-3 years	FWS, FDEP, private, universities	20	20	20	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	sits-h3.1.4	Investigate the use of ornamental and exotic vegetation as food and habitat.	2-3 years	FWS, FDEP, private, universities	15	15	15	
3	sits-h3.2.1	Investigate movement patterns and the spatial utilization of habitat to determine important core areas.	2-3 years	FWS, FDEP, private, universities	25	25	25	
3	sits-h3.2.2	Determine if the amount and configuration of remaining occupied and unoccupied habitat is sufficient to support a stable population of Stock Island tree snails.	2-3 years	FWS, FDEP, private, universities	25	25	25	
3	sits-h4.0 [thh-8.0]	Monitor the status of Stock Island tree snail habitat.	continuous	FWS, FWC, FDEP	8	8	8	
3	sits-h5.0 [thh-9.0]	Increase public awareness of Stock Island tree snail habitat and instill stewardship.	continuous	FWS, FDEP, FWC, counties	10	5	5	
2	sits-s1.1.1	Determine status of snails on Stock Island.	1-2 years	FWS, FDEP	5	5		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	sits-s1.1.2	Determine status of populations in Key West.	1-2 years	FWS, FDEP	5	5		
3	sits-s1.2.1	Determine the status of snails in Key Largo subdivisions and other areas in Key Largo.	completed					Completed by CLNWR in 1999/2000.
2	sits-s1.2.2	Determine status of snails present in Calusa Cove.	completed					Completed by CLNWR in 1999/2000.
2	sits-s1.2.3	Determine status of snails in John Pennekamp Coral Reef State Park.	completed					Completed by CLNWR in 1999/2000.
2	sits-s1.2.4	Determine status of snails in Crocodile Lake National Wildlife Refuge/Key Largo Hammocks State Botanical Site, Key Largo.	completed					Completed by CLNWR in 1999/2000.
2	sits-s1.3.1	Determine the status of snails at Monkey Jungle.	1-2 years	FWS, private	5	5		Examined in 1995, see Forys et al 1995.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	sits-s1.3.2	Determine status of snails in the Everglades National Park and Big Cypress National Preserve.	1-2 years	FWS, NPS	5	5		Examined in 1995, see Forys et al 1995.
3	sits-s1.4	Maintain and improve the GIS database for snail information.	continuous	FWS, FWC, FDEP, NPS	2	2	2	
3	sits-s2.1	Assign a biologist responsible for implementing recovery actions for threatened or endangered species of the Lower Keys.	completed					Biologist currently stationed in Vero Beach Ecological Services office and Big Pine Key suboffice.
3	sits-s2.2.1	Develop a standard protocol for conduction, monitoring, and evaluating all reintroduction, translocation, and supplementation efforts of Stock Island tree snails using the IUCN/SSC Guidelines for Reintroduction.	2-3 years	FWS, FDEP, FWC, counties	12	12	12	

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	sits-s2.2.2	Relocate snails to secure areas in the Lower Keys (Key West Botanical Gardens, Weapons Hammock, National Key Deer Refuge).	completed					Populations relocated during 1996-2000.
2	sits-s2.2.3	Monitor all reintroduced/relocated populations.	continuous	FWS, FDEP, counties	8	8	8	
2	sits-s2.3	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	sits-s2.4	Provide information concerning Stock Island tree snails to Federal, State, county, and city agencies.	continuous	FWS, FDEP, FWC, NPS, counties	3	3	3	
2	sits-s2.5.1 [thh-2.6, 3.6]	Minimize the impacts of mosquito spraying and other herbicide use.	continuous	FWS, FDEP, counties				Spraying prohibited in range of tree snail on public lands.
3	sits-s2.5.2 [thh-3.5]	Reduce illegal collecting.	continuous	FWS, FDEP, FWC, counties				Task currently enforced and cost is included in responsible agency's budget.

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	sits-s2.5.3 [thh-2.4, 3.4]	Minimize the impacts of native and non-native predators to snails.	continuous	FWS, FDEP, FWC, counties	2	2	2	No systematic effort to control predators is presently in place.
3	sits-s2.5.4 [thh-1.2]	Develop a Memorandum of Agreement with Monroe County to ensure their actions do not harm the Stock Island tree snail.	1-2 years	FWS, FDEP, counties	3	3		
3	sits-s3.1	Investigate the genetics of snails from different sites.	1-2 years	FWS, universities	5	5		
2	sits-s3.2	Identify factors that affect the persistence of the Stock Island tree snail.	2-3 years	FWS, FDEP, universities	15	15	15	
2	sits-s3.3.1	Determine subpopulations most vulnerable to extinction.	2-3 years	FWS, FDEP, universities	25	25	25	
3	sits-s3.3.2	Determine the necessary number of subpopulations and level of exchange that will enable the snail to persist for 100 years.	2-3 years	FWS, universities	30	30	30	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	sits-s3.4	Determine what constitutes a stable age structure and group size for the snail.	2-3 years	FWS, universities	25	25	25	
3	sits-s4.1	Develop methods to monitor presence of snails, population dynamics, and habitat use.	1-2 years	FWS, universities	10	10		
3	sits-s4.2	Develop methods to monitor demographic parameters.	1-2 years	FWS, FDEP, universities	10	10		
2	sits-s4.3	Monitor the success of tree snail reintroduction efforts.	continuous	FWS, FDEP, universities, counties	5	5	5	
3	sits-s4.4	Determine the effects of relocated snails on flora and fauna already present.	2-3 years	FWS, FDEP, universities	8	8	8	
3	sits-s5.1	Increase public awareness and stewardship for the Stock Island tree snail.	continuous	FWS, FDEP, FWC, NPS, counties	10	5	5	
3	ssbu-h1.1.1 [thh-1.1]	Continue Federal acquisition efforts.	completed					Schaus swallowtail butterfly. Cost dependent upon specific site and amount of land acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-h1.1.2 [thh-1.1]	Support State, local and non-governmental organizations acquisition efforts.	continuous	FWS, FDEP, NPS, counties, private				Cost dependent upon specific site and amount of land acquired.
2	ssbu-h1.2.1 [thh-1.2-1.3]	Protect butterflies on private lands.	continuous	FWS, private				Cost dependent upon type of protection provided.
2	ssbu-h1.2.2 [thh-1.3]	Protect butterflies on public lands.	continuous	FWS, FDEP, NPS, counties				Cost dependent upon type of protection provided.
2	ssbu-h1.2.3 [thh-1.4]	Utilize Federal mechanisms to protect and prevent degradation of Schaus swallowtail butterfly habitat.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	ssbu-h1.2.4 [thh-1.3-1.4]	Coordinate with State and Monroe County agencies and private entities to develop management actions to protect Schaus swallowtail butterfly habitat.	1-2 years	FWS, FWC, FDEP, counties	5	5		
2	ssbu-h1.2.5	Avoid clearing or disturbing hammocks.	continuous	FWS, FDEP, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-h1.2.6 [thh-3.5]	Restrict access to Schaus swallowtail butterfly habitat.	continuous	FWS, FDEP, NPS				Task currently enforced and cost is included in responsible agency's budget.
3	ssbu-h1.2.7	Establish and protect 500 m buffers around priority habitat.	continuous	FWS, FDEP, NPS				Cost dependent upon type of protection provided.
3	ssbu-h1.2.8 [thh-2.2, 3.2]	Prevent fires.	continuous	FWS, FDEP, NPS, DOF				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	ssbu-h1.2.9 [thh-2.4]	Eliminate exotic vegetation.	continuous	FWS, FDEP, NPS	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.
3	ssbu-h2.1 [thh-2.1-2.7]	Restore Schaus swallowtail butterfly habitat.	continuous	FWS, FDEP, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	ssbu-h2.2 [thh-2.7]	Improve habitat by planting or encouraging native plant species.	continuous	FWS, FDEP, NPS, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	ssbu-h2.3	Improve habitat by conducting selective trimming.	continuous	FWS, FDEP, NPS	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being improved.
3	ssbu-h2.4 [thh-2.4]	Remove exotic vegetation.	continuous	FWS, FDEP, NPS, counties	3/acre	3/acre	3/acre	Total cost dependent upon number of acres infested with exotics.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-h2.5 [thh-2.5, 3.5]	Remove trash debris.	continuous	FWS, FDEP, NPS, private, counties				Task currently implemented on public lands and cost is included in responsible agency's budget.
3	ssbu-h3.1.1	Determine minimum area requirements.	2-3 years	FWS, FDEP, universities	30	30	30	
3	ssbu-h3.1.2	Identify host plants, their status and role in the hammock community, effects from natural factors, and how the Schaus swallowtail butterfly is dependent on them.	2-3 years	FWS, FDEP, universities	25	25	25	
3	ssbu-h3.1.3	Determine the effects of forest canopy structure and light conditions on the Schaus swallowtail butterfly.	2-3 years	FWS, FDEP, universities	25	25	25	
3	ssbu-h3.1.4	Investigate the effect of habitat change.	2-3 years	FWS, FDEP, universities	20	20	20	
3	ssbu-h3.2.1	Investigate flight patterns and the spatial utilization of habitat to identify important core areas and corridors.	2-3 years	FWS, FDEP, universities	30	30	30	

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
3	ssbu-h3.2.2	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of Schaus swallowtail butterflies..	2-3 years	FWS, FDEP, universities	25	25	25	
3	ssbu-h4.1	Conduct long-term monitoring of habitat patches.	continuous	FWS, FDEP, counties, universities	10	10	10	
3	ssbu-h4.2	Monitor primary and edge forest habitat.	continuous	FWS, FDEP, counties, universities	8	8	8	
3	ssbu-h4.3 [thh-8.0]	Monitor ongoing and proposed habitat restoration efforts.	continuous	FWS, FDEP, counties, universities	8	8	8	
3	ssbu-h5.0 [thh-9.0]	Increase public awareness of Schaus swallowtail butterfly habitat and instill stewardship.	continuous	FWS, FDEP, NPS, NGO, counties	10	5	5	
2	ssbu-s1.1	Determine the status of wild butterflies within current range.	2 years	FWS, universities	10	10		
3	ssbu-s1.2	Determine the status of captive- reared Schaus swallowtail butterflies.	2 years	FWS, universities, private	5	5		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-s1.3.1	Survey butterflies along ecotonal regions.	1-2 years	FWS, universities	15	15		
3	ssbu-s1.3.2	Survey the amount of light or closed canopy and its effects on species numbers, etc.	1-2 years	FWS, universities	20	20		
3	ssbu-s1.3.3	Determine species composition and abundance between different stands of forest.	1-2 years	FWS, universities	15	15		
3	ssbu-s1.3.4	Survey hammock microclimate during breeding and flight time.	1-2 years	FWS, universities	10	10		
3	ssbu-s1.3.5	Survey the distribution of adult butterflies and the distribution of host plants.	1-2 years	FWS, universities	15	15		
3	ssbu-s1.4	Determine the status of habitat at release sites.	continuous	FWS, universities	1	1	1	
3	ssbu-s1.5	Survey other butterfly populations in occupied Schaus swallowtail butterfly habitat.	1-2 years	FWS, universities	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-s1.6	Maintain and improve the GIS database for butterflies information.	continuous	FWS, NPS, FDEP, universities	3	3	3	
3	ssbu-s1.7	Conduct presence/absence surveys for Schaus swallowtail butterflies in suitable habitat throughout the Florida Keys.	2 years	FWS, universities	15	15		
3	ssbu-s2.1	Assign a biologist responsibility for implementing recovery actions for the threatened or endangered species of the upper Florida Keys and Miami-Dade County (Deering Estate and Biscayne National Park).	completed					Biologist currently stationed in Vero Beach Ecological Services office and Big Pine Key suboffice.
2	ssbu-s2.2	Utilize Federal regulatory mechanisms for protection.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	ssbu-s2.3	Provide Schaus swallowtail butterfly information to the Federal, State, county, and city agencies.	continuous	FWS, FDEP, NPS, NGO, counties	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-s2.4.1 [thh-2.6, 3.6]	Eliminate the negative effects of pesticides and other biocides.	continuous	FWS, counties				Pesticide use prohibited through significant portions of this species range.
2	ssbu-s2.4.2 [thh-1.2]	Reduce the effects of habitat loss, destruction, and modifications on Schaus swallowtail butterflies in the Florida Keys.	continuous	FWS, FDEP, counties				Cost dependent upon type of protection provided.
2	ssbu-s2.4.3 [thh-3.5]	Eliminate illegal collecting of the Schaus swallowtail butterfly.	continuous	FWS, FWC, FDEP				Task currently enforced and cost is included in responsible agency's budget.
3	ssbu-s2.4.4 [thh-2.6, 3.6]	Minimize the effects of contaminants on the Schaus swallowtail butterfly.	continuous	FWS, counties				Spraying prohibited in range of Schaus on public lands.
3	ssbu-s2.5.1	Develop criteria for captive propagation protocol.	1-2 years	FWS, universities	15	15		
3	ssbu-s2.5.2	Develop threshold criteria to act as a trigger for future captive propagations.	1-2 years	FWS, universities	15	15		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-s2.5.3	All future efforts to captively breed Schaus swallowtail butterflies should be conducted in situ in as natural conditions as possible.	continuous	FWS, universities	25	25	25	Cost applicable only to those years captive propagation is conducted.
3	ssbu-s2.5.4	Conduct appropriate health screenings of all release stock prior to reintroduction.	continuous	FWS, universities	5	5	5	Cost applicable only to those years health screenings are needed.
3	ssbu-s2.5.5	Monitor introduced populations to determine survival, growth, and reproductive success.	continuous	FWS, FDEP, universities	10	10	10	
3	ssbu-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	3-5 years	FWS, universities	30	30	30	
2	ssbu-s3.2.1	Determine subpopulations vulnerable to extinction.	completed					See work by Emmel.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	ssbu-s3.2.2	Determine the necessary number of subpopulations and level of exchange that will enable Schaus swallowtail butterfly to persist for 100 years.	3-5 years	FWS, universities	30	30	30	
3	ssbu-s3.3	Examine factors that affect the abundance and distribution of the Schaus swallowtail butterfly.	2-3 years	FWS, FDEP, universities	15	15	15	
3	ssbu-s3.4	Evaluate the effect of releasing captive-bred butterflies into the wild for the persistence of the Schaus swallowtail butterfly.	2-3 years	FWS, universities	25	25	25	
3	ssbu-s3.5	Investigate the effects of insecticides used for mosquito control on surrogate species closely related to the Schaus swallowtail butterfly.	1-2 years	FWS, counties, universities	10	10		Further pesticide studies might be needed, but sufficient information is available to show that pesticides should not be used in areas occupied by this butterfly.
3	ssbu-s4.1	Monitor demographic parameters.	continuous	FWS, FDEP, NPS, counties, universities	20	20	20	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	ssbu-s4.2	Continue long-term monitoring of the Schaus swallowtail butterfly.	continuous	FWS, FDEP, universities	10	10	10	
3	ssbu-s5.1	Increase public awareness and stewardship.	continuous	FWS, FDEP, NPS, NGO, counties	10	5	5	

Mangrove Implementation

amcr = American crocodile **h = habitat task**

mn = mangrove **s = species task**

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	amcr-h1.1 [mn-2.1.1-2.1.5]	Acquire or otherwise protect habitat for American crocodiles.	continuous	FWS, FWC, NPS				Cost dependent upon specific site and amount of land acquired.
3	amcr-h1.2 [mn-2.1.1, 2.1.4-2.1.5, 2.3.2, 2.4, 2.5, 5.1.2]	Protect essential crocodile habitat on private lands.	continuous	FWS, FWC, NPS				Cost dependent upon type of protection afforded.
2	amcr-h2.1 [mn-2.1.5, 3.2, 5.1.2]	Continue to maintain nesting sites adequate to maintain viability of the American crocodile.	continuous	FWS, FWC, NPS, private	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres being maintained.
3	amcr-h2.2 [2.3.3, 2.5, 3.1, 3.4, 3.5, 4.1, 5.4]	Restore areas to suitable habitat.	continuous	FWS, FWC, NPS	10/acre	10/acre	10/acre	Total cost dependent upon number of acres being restored.
2	amcr-h2.3 [mn-3.1, 4.2, 4.3]	Complete the Project to Modify Water Deliveries to Everglades NP and Canal 111.	5 years	FWS, FWC, WMD, NPS, FDEP, COE, FDACS, EPA, counties	25000	25000	25000	Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	amcr-h2.4	Continue to monitor the effects of the Interim Operating Plan (for protection of the Cape Sable seaside sparrow) to Everglades NP on the American crocodile to determine optimal operations schedules.	5 years	FWS, FWC, WMD, NPS, FDEP, COE, FDACS, EPA, counties	30	30	30	
2	amcr-h2.5 [mn-5.3]	Continue habitat and population modeling to determine operational schedules for structures associated with the Program to Modify Water Deliveries to Everglades NP, Canal 111, and the Southern Florida Flood Control Project that provide optimal habitat for the American crocodile.	5 years	FWS, FWC, WMD, NPS, FDEP, COE, FDACS, EPA, counties	125	125	125	
3	amcr-h2.6 [mn-2.3.3]	Create additional nesting habitat for crocodiles in South Florida.	continuous	FWS, FWC, private, NPS, universities	4/acre	4/acre	4/acre	Total cost dependent upon number of acres being created for nesting habitat.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	amcr-h2.7 [mn-2.2, 4.1.1, 4.5]	Restore or create nursery habitat for American crocodiles in South Florida.	continuous	FWS, FWC, private, NPS, universities	4/acre	4/acre	4/acre	Total cost dependent upon number of acres being restored.
3	amcr-h2.8 [mn-2.3.1-2.3.3, 2.4, 3.4]	Continue to enforce land-use restrictions in essential crocodile habitat.	continuous	FWS, FWC, NPS				Cost included in budget of agency responsible for enforcing restrictions.
3	amcr-h3.0 [mn-5.1.3]	Conduct research on the habitat relationships of the American crocodile.	3 years	FWS, FWC, NPS, universities	45	45	45	
3	amcr-h4.1 [mn-3.5, 1.2]	Continue to monitor crocodile nesting habitat.	continuous	FWS, FWC, NPS, private, universities	50	50	50	
3	amcr-h4.2 [mn-2.4]	Continue long-term assessments of pesticide and heavy metal contamination levels in South Florida ecosystems.	continuous	FWS, FWC, WMD, NPS, USGS/BRD, EPA, universities				Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
2	amcr-h5.0 [mn-6.0, 6.3]	Increase public awareness of the habitat needs of crocodiles.	continuous	FWS, FWC, county parks, state parks, NPS, universities	50	50	50	High cost required for developing extensive outreach and education program.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	amcr-s1.1 [mn-1.1, 1.3,2.1.5, 5.1.2, 5.1.3]	Evaluate coastal wetlands to determine their suitability for crocodiles.	continuous	FWS, FWC, NPS, universities	25	25	10	
3	amcr-s1.2 [mn-5.1, 5.1.2]	Survey crocodile colonies in suitable habitats in South Florida.	continuous	FWS, FWC, NPS, universities	30	30	30	
3	amcr-s2.1.1 [mn-4.4, 2.4]	Control human-induced crocodile mortality and disturbance.	continuous	FWS, FWC, NPS	35	35	35	
3	amcr-s2.1.2	Alert motorists on roads where repeated collisions between automobiles and American crocodiles have occurred.	continuous	FWS, FWC, NPS, DOT	5	1	1	
2	amcr-s2.1.3 [mn-4.4]	Reduce the incidence of American crocodile road mortalities by installing box culverts.	continuous	FWS, FWC, NPS, DOT				Too many variables, such as width and location of road, to accurately determine cost.
3	amcr-s2.1.4 [mn-3.4]	Control terrestrial predators of crocodile eggs and hatchlings in areas where they may be artificially high.	continuous	FWS, FWC, NPS, private	1	1	1	Minimal cost due to low disturbance from predators.

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	amcr-s2.2 [mn-3.4]	Continue long-term assessment of pesticide and heavy metal contamination levels in crocodile eggs.	every 5 years	FWS, FWC, WMD, NPS, USGS/BRD, EPA, universities	10			Approximately 10 eggs will be analyzed once every five years at a cost of $1,000 per egg.
2	amcr-s2.3 [mn-2.5-2.7, 3.2, 3.3]	Assure coordinated management actions by interagency agreements or other means.	continuous	FWS, FWC, NPS, WMD, COE	60	60	60	Cost encompasses consensus-building efforts among agencies involved in Everglades restoration efforts.
3	amcr-s3.1 [mn-5.1.3]	Determine the carrying capacity of remaining crocodile habitat in South Florida.	continuous	FWS, FWC, NPS, universities	35	35	35	
3	amcr-s3.2 [mn-5.1.2, 5.1.3]	Conduct research to determine basic biological needs of the American crocodile.	completed					
3	amcr-s3.3 [mn-3.4, 3.5]	Evaluate the effects of human disturbances on crocodile behavior.	continuous	FWS, FWC, NPS, universities	75	75	75	
3	amcr-s3.4	Develop identification techniques for American crocodiles.	completed					
2	amcr-s4.1	Coordinate monitoring programs and protocols.	continuous	FWS, FWC, NPS, FDEP, counties, universities	5	5	5	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	amcr-s4.2 [mn-5.1.2]	Conduct surveys for American Crocodiles.	continuous	FWS, FWC, private, NPS, universities	50	50	50	
3	amcr-s4.3	Conduct a mark-recapture program for the American crocodile.	continuous	FWS, FWC, private, NPS, universities	75	75	75	
3	amcr-s5.1	Continue State program for relocation of crocodiles that threaten human safety.	continuous	FWS, FWC	50	50	50	
3	amcr-s5.2	Assess the effectiveness of road signage for reducing the numbers of American crocodiles killed by automobiles.	continuous	FWS, FWC, NPS, DOT	1	1	1	
3	amcr-s5.3	Develop and distribute informational brochures regarding the biology and conservation of American crocodiles.	continuous	FWS, FWC, NPS, universities, county parks, state parks	20	20	20	

Mesic Pine Flatwoods Implementation

depu = beautiful pawpaw **h = habitat task**

mpf = mesic pine flatwoods **s = species task**

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	depu-h1.1 [mpf-2.1-2.5, 5.1-5.4, 6.1]	Secure beautiful pawpaw (Deeringothamnus pulchellus) habitat through acquisition, landowner agreements, and conservation easements.	continuous	FWS, FDEP, FWC, DOF				Cost dependent upon specific site and amount of land acquired.
2	depu-h1.2.1	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, NGO, NPS, WMD, DOF, private	.06/acre	.06/acre	.06/acre	Total cost dependent upon number of acres burned.
2	depu-h1.2.2 [mpf-3.9]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FWC, FDEP, NPS, WMD, NGO	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
3	depu-h1.2.3 [mpf-3.6, 3.10]	Control access to areas where listed plants are growing.	as needed	FWS, FWC, FDEP, NGO, NPS, WMD	10	10	10	
2	depu-h2.1 [mpf-4.2]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, NGO, NPS, WMD, DOF, private	.06/acre	.06/acre	.06/acre	Total cost dependent upon number of acres burned.

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	depu-h2.2 [mpf-4.1-4.6]	Enhance sites with native plant species.	3-5 years	FWS, FWC, FDEP, NPS, WMD, NGO	5/acre	5/acre	5/acre	Total cost dependent upon number of acres being restored.
2	depu-h3.0 [mpf-7.1-7.8]	Continue habitat level research projects.	2 years	FWS, FWC, FDEP, NGO, universities	30	30		
3	depu-h4.0 [mpf-3.7]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, NGO, universities	20	20	20	
3	depu-h5.0 [mpf-8.0]	Provide public information about pine flatwoods and vegetative communities and their unique biota.	continuous	FWS, FWC, DOF, NGO, private	10	5	5	
1	depu-s1.1.1	Continue surveys in Lee and Charlotte Counties.	2 years	FWS, counties, FDEP, WMD, FWC	15	15		
1	depu-s1.1.2	Continue surveys on protected lands.	2 years	FWS, counties, FDEP, WMD, FWC	15	15		
3	depu-s1.2 [mpf-1.1-1.3]	Maintain information on depu and its habitat in GIS database.	continuous	FWS, FDEP, USGS, counties	1	1	1	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	depu-s2.1 [mpf-2.1-2.5, 5.1-5.4, 6.1]	Acquire or protect habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP, FDACS, DOF				Cost dependent upon specific site and amount of land acquired.
1	depu-s2.2 [mpf-2.7-2.9, 3.1 - 3.10]	Protect populations on public lands.	continuous	FWS, FWC, DOF, FDACS, FDEP	15	15	15	
2	depu-s2.3 [mpf-2.9, 3.3-3.4]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of county's budget.
2	depu-s2.4.1 [mpf-2.8]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agencies' budget.
2	depu-s2.4.2 [mpf-2.8]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost dependent upon specific situation.
2	depu-s2.5	Develop an ex situ collection.	continuous	FWS, private, NGO	5	5	5	
3	depu-s2.6.1	Establish protocol for reintroduction.	2 years	FWS, private NGO	20	20		
3	depu-s2.6.2	Locate potential (re)introduction sites.	2-3 years	FWS, private, FWC, NPS, FDEP, WMD, COE	10	10	10	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	depu-s2.6.3	(Re)introduce plants to protected sites.	2-3 years	FWS, private, FWC, NPS, FDEP, WMD, COE	30	30	30	
3	depu-s3.1	Conduct research to determine demographic information.	3-5 years	FWS, FDEP, FWC, universities	40	40	40	
3	depu-s3.2	Conduct population viability and risk assessment analysis.	3 years	FWS, FDEP, FWC, universities	30	30	30	
2	depu-s3.3 [mpf-7.1-7.5]	Conduct research to assess management requirements of depu.	2-3 years	FWS, FDEP, FWC, universities	35	35	35	
2	depu-s3.4	Assess feasibility of relocation and obtain information on techniques and survival.	2-3 years	FWS, private, FWC, FDEP	35	35	35	
3	depu-s4.1.1	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, NPS, FDEP	20	20	20	
3	depu-s4.1.2	Monitor the effects of land management actions on depu.	continuous	FWS, FWC, NPS, FDEP	20	20	20	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
3	depu-s4.2	Develop a quantitative description of the population structure.	2 years	FWS, FDEP, FWC, universities	30	30		
3	depu-s4.3 [mpf-7.7]	Monitor reintroduced plants.	continuous	FWS, FDEP, FWC, counties	20	20	20	
3	depu-s5.0 [mpf-8.0]	Provide information about depu to the public.	continuous	FWS, FWC, DOF, NGO, private	10	5	5	

Pine Rocklands Implementation

acre = crenulate lead-plant | **gasm = Small's milkpea** | **posm = tiny polygala** | **h = habitat task**

chde = deltoid spurge | **kede = Key deer** | **pr = pine rocklands** | **s = species task**

chga = Garber's spurge

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	acre-h1.1	Assess the available GIS data for crenulate lead-plant (Amorpha crentulata).	completed					
1	acre-h1.2	Create coverage of population locations.	2 years	FWS, DERM, NGO, counties, private	10	10		
1	acre-h1.3	Acquire recent imageries of the sites.	1 year	FWS, counties, NGO, private	5			
1	acre-h1.4	Distribute the coverage.	as needed	FWS, NPS, counties, NGO, private	5	5	5	
1	acre-h2.1 [pr-2.6]	Protect pine rockland habitat.	continuous	FWS, NPS, counties, NGO, private				Cost will vary depending on specific needs.
1	acre-h2.2 [pr-1.1, 1.2, 6.0]	Protect or acquire privately owned sites.	continuous	FWS, FWC, FDEP, counties, NGO				Cost dependent upon specific site and amount of land acquired.
1	acre-h2.3.1 [pr-1.0]	Eliminate human-caused degradation.	as needed	FWS, NPS, counties, private	5	5	5	

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	acre-h2.3.2 [pr-2.4, 3.4]	Control invasive plants, particularly exotics.	continuous	FWS, NPS, counties, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
1	acre-h3.1 [pr-1.4]	Eliminate physical degradation of habitat and restore to optimal conditions.	as needed	FWS, NPS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
1	acre-h3.2 [pr-2.0, 3.0]	Develop best management practices for pine rocklands.	3-5 years	FWS, NPS, counties, private, NGO	15	15	15	
1	acre-h3.3	Implement necessary management.	continuous	FWS, NPS, counties, private				Cost dependent upon type of management implemented.
1	acre-h3.4 [pr-2.2, 3.2]	Continue to expand prescribed burning.	5-10 years	FWS, NPS, counties, private, DOF	1/acre	1/acre	1/acre	After task is complete and a normal fire rotation is achieved, growing season burns will be employed to maintain appropriate burn regime.
1	acre-h4.1	Monitor sites with crenulate lead-plant populations to determine success.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
1	acre-h4.2 [pr-2.2, 3.2]	Investigate fire history and incorporate into management strategies.	2 years	FWS, DERM, DOF	10	10		
1	acre-h4.3 [pr-2.3]	Rehydrate soils where feasible.	2 years	FWS, DERM, counties	300	300		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	acre-h5.0 [pr-9.0]	Continue implementation of the fire education program and modify as necessary, any fire management education program that has been developed.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
2	acre-s1.0	Conduct surveys to determine distribution of crenulate lead-plants.	2 years	FWS, DERM, NPS, NGO, private	50	50		
2	acre-s2.1	Augment natural populations of crenulate lead-plants, where appropriate.	3 years	FWS, NGO, private	5	5	5	
1	acre-s2.2	Continue work with ex situ propagation and seed storage banks.	3 years	FWS, NGO, private	3	3	3	
2	acre-s2.3	Continue to identify potential reintroduction sites and reintroduce pine rockland plants, where appropriate.	2 years	FWS, NPS, DERM, NGO, private	10	10		
3	acre-s2.4.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	acre-s2.4.2	Encourage implementation of management plans.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	acre-s2.4.3	Continue to enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	acre-s3.1	Continue to investigate and refine the habitat needs of crenulate lead-plant.	3 years	FWS, DERM, counties, private, NGO	20	20	20	
2	acre-s3.2	Determine population size and viability of all populations.	3 years	FWS, DERM, counties, private, NGO	5	5	5	
1	acre-s3.3	Study the reproductive biology of crenulate lead-plant.	2 years	FWS, DERM, counties, private, NGO	10	10		
1	acre-s3.4	Conduct genetic studies to document the genetic variation within and between populations.	2 years	FWS, DERM, counties, private, NGO	35	35		
1	acre-s3.5	Study the fire ecology of A. crenulata.	3 years	FWS, NPS, DERM, counties, private, NGO	25	25	25	
2	acre-s3.6	Study the response of crenulate lead-plant to habitat management treatments.	4 years	FWS, NPS, DERM, counties, private, NGO	60	60	60	
1	acre-s4.1	Collect existing and historical data.	3 years	FWS, DERM, counties, NGO, private	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	acre-s4.2	Monitor status and success of all populations; change management practices if so indicated.	continuous	FWS, NPS, DERM, counties, NGO, private	30	30	30	
2	acre-s4.3	Convene a meeting of researchers and land managers.	1 year	FWS, DERM, counties, NGO, private	2			
2	acre-s4.4	Monitor reintroduction success and modify procedures as necessary.	continuous	FWS, NPS, DERM, counties, private, NGO	7	7	7	
1	acre-s5.0	Continue to provide public information about pine rocklands and their unique flora.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
1	chde-h1.1 [pr-2.6]	Protect pine rockland habitat for deltoid spurge (Chamaesyce deltoidea ssp. deltoidea).	continuous	FWS, NPS, counties, NGO, private				Cost will vary depending on specific needs.
2	chde-h1.2 [pr-1.1, 1.2, 6.0]	Protect or acquire privately owned sites.	continuous	FWS, FWC, FDEP, counties, NGO				Cost dependent upon specific site and amount of land acquired.
1	chde-h1.3 [pr-3.0]	Develop and implement best management practices for pine rocklands.	3-5 years	FWS, NPS, counties, private, NGO	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	chde-h1.4 [pr-2.2, 3.2]	Continue to expand prescribed burns.	5-10 years	FWS, DOF, NPS, counties, private	1/acre	1/acre	1/acre	After task is complete and a normal fire rotation is achieved, growing season burns will be employed to maintain appropriate burn regime.
1	chde-h1.5.1 [pr-1.0]	Eliminate human-caused degradation.	as needed	FWS, NPS, counties	2	2	2	
1	chde-h1.5.2 [pr-2.4, 3.4]	Control invasive plant species, particularly exotics.	continuous	FWS, NPS, counties, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
1	chde-h2.1 [pr-1.4]	Eliminate physical degradation of habitat and restore to optimal conditions.	as needed	FWS, NPS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
2	chde-h2.2 [pr-3.0]	Continue to refine management practices for pine rocklands.	3 years	FWS, DERM, counties, NGO, private	20	20	20	
1	chde-h2.3 [pr-2.2, 3.2]	Continue to conduct prescribed burns.	continuous	FWS, DOF, DERM, counties, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
1	chde-h3.1	Continue to investigate and refine the habitat needs of each species.	3 years	FWS, NGO, counties, private	30	30	30	
1	chde-h3.2 [pr-2.2, 3.2]	Investigate fire history and incorporate into management strategies.	2 years	FWS, DERM, DOF	10	10		

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
2	chde-h3.3	Monitor sites with C. deltoidea ssp. deltoidea to determine success.	continuous	FWS, NPS, NGO	5	5	5	
1	chde-h3.4.1	Assess the availability of GIS data.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
2	chde-s1.1	Inventory known populations.	1 year	FWS, DERM, counties, NGO, private	15			
1	chde-s1.2	Resurvey historic locations.	1 year	FWS, DERM, counties, NGO, private	15			
1	chde-s1.3	Map distribution of known populations and suitable habitat.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
2	chde-s2.1.1	Continue work with ex situ propagation and seed banks.	3 years	FWS, NGO, private	3	3	3	
2	chde-s2.1.2	Identify potential reintroduction sites and reintroduce C. deltoidea, where appropriate.	2-3 years	FWS, NPS, DERM, counties, NGO, private	10	10	10	
2	chde-s2.1.3	Monitor the experimental outplantings.	continuous	FWS, NPS, DERM, counties, NGO, private	5	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chde-s2.2.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	chde-s2.2.2	Encourage implementation of management plans.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.
3	chde-s2.2.3	Continue to enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
1	chde-s3.1	Investigate the reproductive biology of C. deltoidea.	2 years	FWS, DERM, NGO, private, counties	15	15		
1	chde-s3.2	Identify demographics and gene flow in C. deltoidea.	3 years	FWS, DERM, NGO, private, counties	40	40	40	
2	chde-s3.3	Study the response of C. deltoidea to habitat management treatments.	3-4 years	FWS, NPS, DERM, NGO, private, counties	60	60	60	
2	chde-s3.4	Characterize the habitat and identify suitable sites for experimental outplantings.	1 year	FWS, NPS, DERM, NGO, private, counties	5			
1	chde-s4.1	Collect existing and historical data and place in a central location.	1 year	FWS, DERM, counties, NGO, private	15			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	chde-s4.2	Convene a meeting of all researchers.	1 year	FWS, DERM, counties, NGO, private	2			
2	chde-s4.3	Monitor status and success of all populations and change management practices if so indicated.	continuous	FWS, DERM, counties, NGO, private	30	30	30	
2	chde-s4.4	Monitor reintroduction success and modify procedures as necessary.	continuous	FWS, NPS, DERM, NGO, private, counties	7	7	7	
1	chde-s5.0	Continue implementation of the fire education program and modify as necessary any fire management education program that has been developed.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
1	chga-h1.1 [pr-2.6]	Protect pine rockland habitat of Garber's spurge (Chamaesysce garberi).	continuous	FWS, NPS, counties, NGO, private				Cost will vary depending on specific needs.
2	chga-h1.2 [pr-1.1, 1.2, 6.0]	Protect or acquire privately owned sites.	continuous	FWS, FWC, FDEP, counties, NGO				Cost dependent upon specific site and amount of land acquired.
1	chga-h1.3 [pr-3.0]	Develop and implement best management practices for pine rocklands.	3-5 years	FWS, NPS, NGO, counties, private	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	chga-h1.4 [pr-2.2, 3.2]	Continue to conduct prescribed burns.	continuous	FWS, DOF, DERM, counties, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
1	chga-h1.5.1 [pr-1.0]	Eliminate human caused degradation.	as needed	FWS, NPS, counties	2	2	2	
1	chga-h1.5.2 [pr-2.4, 3.4]	Control invasive plant species, particularly exotics.	continuous	FWS, NPS, counties, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
1	chga-h2.1 [pr-1.4]	Eliminate physical degradation of habitat and restore to optimal conditions.	as needed	FWS, NPS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
1	chga-h2.2 [pr-3.0]	Continue to refine management practices for pine rocklands.	3 years	FWS, NGO, DERM, counties, private	20	20	20	
1	chga-h2.3 [pr2.2, 3.2]	Continue to conduct prescribed burns.	continuous	FWS, DOF, DERM, counties, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
1	chga-h3.1	Continue to investigate and refine the habitat needs of each species.	3 years	FWS, NGO, counties, private	30	30	30	
1	chga-h3.2 [pr-2.0, 3.0]	Investigate fire history and incorporate into management strategies.	2 years	FWS, DERM, DOF	10	10		
2	chga-h3.3	Monitor sites with C. garberi to determine success.	continuous	FWS, NPS, NGO	5	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	chga-h3.4.1	Assess the availability of GIS data.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
2	chga-s1.1	Inventory known populations.	1 year	FWS, DERM, counties, NGO, private	15			
1	chga-s1.2	Resurvey historic locations.	1 year	FWS, DERM, counties, NGO, private	15			
1	chga-s1.3	Map distribution of known populations and suitable habitat.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
2	chga-s2.1.1	Continue work with ex situ propagation and seed banks.	3 years	FWS, NGO, private	3	3	3	
2	chga-s2.1.2	Identify potential reintroduction sites and reintroduce C. garberi, where appropriate.	2-3 years	FWS, NPS, DERM, NGO, private	10	10	10	
2	chga-s2.1.3	Monitor the experimental outplantings.	continuous	FWS, NPS, DERM, NGO, private, counties	5	5	5	
3	chga-s2.2.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chga-s2.2.2	Encourage implementation of management plans.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.
3	chga-s2.2.3	Continue to enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
1	chga-s3.1	Investigate the reproductive biology of C. garberi.	2 years	FWS, DERM, NGO, private, counties	15	15		
1	chga-s3.2	Identify demographics and gene flow in C. garberi.	3 years	FWS, DERM, NGO, private, counties	40	40	40	
2	chga-s3.3	Study the response of C. garberi to habitat management treatments.	3-4 years	FWS, NPS, DERM, NGO, private, counties	60	60	60	
2	chga-s3.4	Characterize the habitat and identify suitable sites for experimental outplantings.	1 year	FWS, NPS, DERM, NGO, private, counties	5			
1	chga-s4.1	Collect existing and historical data and place in a central location.	1 year	FWS, DERM, counties, NGO, private	15			
2	chga-s4.2	Convene a meeting of all researchers.	1 year	FWS, DERM, counties, NGO, private	2			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	chga-s4.3	Monitor status and success of all populations and change management practices if so indicated.	continuous	FWS, DERM, counties, NGO, private	30	30	30	
2	chga-s4.4	Monitor reintroduction success and modify procedures as necessary.	continuous	FWS, NPS, DERM, NGO, private, counties	7	7	7	
1	chga-s5.0	Continue implementation of the fire education program and modify as necessary any fire management education program that has been developed.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
1	gasm-h1.1 [pr-2.6]	Protect pine rockland habitat of Small's milkpea (Galactia smallii).	continuous	FWS, NPS, counties, NGO, private				Cost will vary depending on specific needs.
2	gasm-h1.2 [pr-1.1, 1.2, 6.0]	Protect or acquire private owned sites.	continuous	FWS, FWC, FDEP, counties, NGO				Cost dependent upon specific site and amount of land acquired.
1	gasm-h1.3.1 [pr-1.0]	Eliminate human-caused degradation.	as needed	FWS, NPS, counties	2	2	2	
1	gasm-h1.3.2 [pr-2.4]	Control invasive plant species, particularly exotics.	continuous	FWS, NPS, counties, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	gasm-h2.1 [pr-1.4]	Eliminate physical degradation of habitat and restore to optimal conditions.	as needed	FWS, NPS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
2	gasm-h2.2 [pr-3.0]	Continue to refine best management practices for pine rocklands.	3 years	FWS, NGO, DERM, counties, private	20	20	20	
2	gasm-h2.3	Management plans for sites including G.smallii should be implemented and modified as necessary for the benefit of this species.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.
1	gasm-h2.4 [pr-2.2, 3.2]	Continue to conduct prescribed burns.	continuous	FWS, DOF, DERM, counties, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
1	gasm-h3.0	Continue to investigate and refine the habitat needs of each species.	3years	FWS, NGO, counties, private	30	30	30	
1	gasm-h4.1	Monitor sites with G. smallii restoration programs to determine success.	continuous	FWS, NPS, NGO	5	5	5	
1	gasm-h4.2 [pr-2.2, 3.2]	Investigate fire history and incorporate into management strategies.	2 years	FWS, DERM, DOF	10	10		
1	gasm-h4.3.1	Assess the GIS data.	completed					

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	gasm-h4.3.2	Create coverage of population locations.	2 years	FWS, DERM, NGO, counties, private	10	10		
1	gasm-h4.3.3	Acquire recent imageries of the sites.	1 year	FWS, counties, NGO, private	5			
1	gasm-h4.3.4	Distribute the coverages.	as needed	FWS, NPS, counties, NGO, private	5	5	5	
1	gasm-h5.0 [pr-9.0]	Continue implementation of the fire education program and modify as necessary, any fire management education program that has been developed.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
2	gasm-s1.1	Inventory known populations.	1 year	FWS, DERM, counties, NGO, private	15			
1	gasm-s1.2	Search for additional populations of G. smallii.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
1	gasm-s1.3	Map distribution of known populations and suitable habitat.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	gasm-s2.1	Augment natural populations of G. smallii, where appropriate.	3 years	FWS, NGO, private	5	5	5	
2	gasm-s2.2.1	Conserve germ plasm.	2-3 years	FWS, NGO, private	1	1	1	
2	gasm-s2.2.2	Study the feasibility of translocating propagules into historically appropriate and protected natural habitats.	3 years	FWS, NGO, NPS, counties, private	7	7	7	
2	gasm-s2.3.1	Use reintroduction protocols established by the conservation community.	continuous	FWS, NGO, NPS, counties, private	5	5	5	
2	gasm-s2.3.2	Monitor the experimental outplantings.	continuous	FWS, NGO, NPS, DERM, counties, private	5	5	5	
3	gasm-s2.4.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	gasm-s2.4.2	Encourage implementation of management plans.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.
3	gasm-s2.4.3	Continue to enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.

					Costs ($1,000s)			
Priority	**Task Number**	**Task Description**	**Task Duration**	**Participants**	**FY 1**	**FY 2**	**FY 3**	**Comments**
1	gasm-s3.1	Study the reproductive biology of G. smallii.	2 years	FWS, NGO, DERM, counties, private	15	15		
2	gasm-s3.2	Study the response of G. smallii to habitat management treatments.	4 years	FWS, NGO, NPS, DERM, counties, private	60	60	60	
1	gasm-s3.3	Study the fire ecology of G. smallii.	3 years	FWS, DERM, DOF, NGO	25	25	25	
2	gasm-s3.4	Determine population size and viability of all populations.	3 years	FWS, DERM, NGO, private	10	10	10	
2	gasm-s3.5	Characterize the habitat and identify suitable sites for experimental outplantings.	1 year	FWS, NPS, DERM, NGO, private	5			
1	gasm-s3.6	Conduct genetic studies to document the genetic variation within and between populations.	2 years	FWS, DERM, NGO, private	35	35		
2	gasm-s3.7	Apply and modify, if need be, reintroduction protocols established by the conservation community.	continuous	FWS, NPS, DERM, NGO, private, counties	15	15	15	
1	gasm-s4.1	Collect existing and historical data and place in a central location.	1 year	FWS, DERM, counties, NGO, private	15			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	gasm-s4.2	Convene a meeting of researchers and land managers.	1 year	FWS, DERM, counties, NGO, private	2			
2	gasm-s4.3	Monitor status and success of all populations; change management practices if so indicated.	continuous	FWS, NPS, DERM, NGO, private	20	20	20	
2	gasm-s4.4	Monitor reintroduction success and modify procedures as necessary.	continuous	FWS, NPS, DERM, NGO, private, counties	7	7	7	
1	gasm-s5.0	Continue to provide public information about pine rocklands and their unique flora.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
2	kede-h1.1.1 [pr-1.1, 6.0]	Continue Federal acquisition efforts for Key deer.	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
2	kede-h1.1.2 [pr-1.1, 6.0]	Support State acquisition efforts.	continuous	FWS, FWC, FDEP				Cost dependent upon specific site and amount of land acquired.
3	kede-h1.1.3 [pr-1.1, 6.0]	Support and encourage land acquisition by non-governmental agencies.	continuous	FWS, NGO, private				Cost dependent upon specific site and amount of land acquired.
3	kede-h1.1.4 [pr-1.1, 6.0]	Purchase and/or trade for lands adjacent to larger tracts of the refuge.	continuous	FWS				Cost dependent upon specific site and amount of land acquired and/or traded.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-h1.1.5 [pr-1.1, 6.0]	Purchase easements when necessary on private property important to Key deer.	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
1	kede-h1.2.1 [pr-1.1, 1.2]	Protect Key deer on private lands acquisition, conservation easements or agreements, and education of land owners.	continuous	FWS, FWC, FDEP, Monroe Co. Land Authority, TNC				Forthcoming habitat conservation plan is important. Several land acquisition programs continue. Monroe Co. regulations.
1	kede-h1.2.2	Protect Key deer on public lands.	continuous	FWS, FWC				Cost dependent upon type of protection provided.
2	kede-h1.2.3 [pr-2.1, 3.1]	Protect important corridor areas.	continuous	FWS, FDEP, FWC, counties				Cost dependent upon type of protection provided.
3	kede-h1.2.4 [pr-2.4]	Eliminate threats from invasive exotic flora and fauna.	continuous	FWS, FWC, NGO	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres infested with exotics.
3	kede-h1.2.5.1 [pr-2.5]	Prohibit campfires in the National Key Deer Refuge.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-h1.2.5.2 [pr-3.2]	Establish and maintain fire breaks and fire trails.	continuous	FWS, FWC, FDEP				Task currently implemented on public lands and cost is included in managing agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	kede-h1.2.5.3 [pr-2.2, 3.2]	Conduct prescribed burns on the National Key Deer Refuge when necessary.	continuous	FWS, NGO	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	kede-h1.2.6	Fence or barricade areas where off-road vehicle use and/or dumping is a threat.	completed					
3	kede-h1.2.7	Address the management and protection of non-refuge lands.	continuous	FWS, FWC, counties, private	25	25	25	
3	kede-h1.2.8	Conduct experimental habitat management on selected Outer Keys.	2-3 years	FWS, FWC	35	35	35	
3	kede-h1.2.9	Maintain and evaluate present deer exclosures on Big Pine Key.	2-3 years	FWS, universities				Current study evaluating deer impacts on vegetation will be complete in 3 years.
3	kede-h2.1 [pr-2.3, 3.3]	Restore natural tidal flow and hydrology by placing culverts or removing fill.	5-10 years	FWS, NGO, COE, DOT, FDEP				Too many variables to accurately determine cost.
3	kede-h2.2 [pr-2.6]	Maintain and manage mosquito ditches so they do not impact deer habitat.	continuous	FWS, NGO, FDEP				Task currently implemented on public lands and cost is included in responsible agency's budget.
2	kede-h2.3	Improve water quality in freshwater sources and restore freshwater sources.	3-5 years	FWS, NGO, WMD	35	35	35	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-h2.4 [pr-3.0]	Enhance Key deer habitat.	continuous	FWS	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	kede-h2.5 [pr-4.1]	Improve habitat by planting or encouraging native plant species.	continuous	FWS	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
3	kede-h2.6	Create habitat by refilling and recreating areas that have been dredged or altered.	continuous	FWS, NGO	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being created for habitat.
3	kede-h3.1.1	Conduct radio telemetry on various subpopulations.	completed					See Lopez 2001 dissertation.
3	kede-h3.1.2	Investigate the effect of habitat change.	completed					See Lopez 2001 dissertation.
3	kede-h3.2.1	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	completed					See Lopez 2001 dissertation.
3	kede-h3.2.2	Determine stable home range and minimum area required.	completed					See Lopez 2001 dissertation.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-h3.2.3	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of deer.	completed					See Lopez 2001 dissertation.
3	kede-h4.0	Monitor the status of Key deer habitat and examine ecological processes.	continuous	FWS, universities	15	15	15	
3	kede-h5.0 [pr-9.0]	Increase public awareness of Key deer habitat and instill stewardship.	continuous	FWS, NGO	15	15	15	
3	kede-s1.1	Develop a Master Census Plan to determine the status of the Key deer an its habitat.	2-3 years	FWS, FWC, NGO, counties, universities	4	4	4	
2	kede-s1.2	Survey for the presence/absence of Key deer in suitable habitat.	completed					See Lopez 2001 dissertation.
3	kede-s1.3	Maintain and improve the GIS database for Key deer information.	continuous	FWS	5	2	2	
3	kede-s2.1	Staff the National Key Deer Refuge with a biologist.	completed					NKDR now has dedicated Key deer biologist.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	kede-s2.2.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation, and supplementation efforts.	2-3 years	FWS, universities	45	45	45	
2	kede-s2.2.2	Reintroduce Key deer to suitable public lands.	10 years	FWS, NGO, universities	100	100	100	
3	kede-s2.2.3	Educate the public on the need for and process of Key deer reintroductions.	10 years	FWS, NGO	10	10	10	
2	kede-s2.2.4	Enforce protection of reintroduced or released Key deer.	as needed	FWS, counties				Cost included in responsible agency's budget.
2	kede-s2.3	Conduct consultations on Federal activities. Determine jeopardy thresholds for the Key deer.	continuous	FWS, FWC, NGO, universities	10	10	10	
3	kede-s2.4	Provide information about Key deer to Federal, State, county and city agencies.	continuous	FWS, NGO, FWC, counties	3	3	3	
2	kede-s2.5.1	Control poaching.	continuous	FWS, FWC				Task currently enforced and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-s2.5.2	Prohibit animal trespass.	continuous	FWS, counties, private				Task currently enforced and cost is included in responsible agency's budget.
3	kede-s2.5.3.1	Reduce speed limit on primary and secondary roads.	continuous	FWS, DOT, counties	4			After task is implemented, cost of enforcing speed zones will be included in responsible agency's budget.
2	kede-s2.5.3.2	Continue and increase enforcement of speed zones.	continuous	FWS, counties				Task currently enforced and cost is included in responsible agency's budget.
3	kede-s2.5.3.3	Identify deer crossings.	completed	FWS				See Lopez 2001 dissertation.
3	kede-s2.5.3.4	Investigate the use of fencing to reduce collisions.	completed	FWS				
3	kede-s2.5.3.5	Identify roads that could be constructed or upgraded, and coordinate to minimize impacts.	continuous	FWS, DOT, counties	1	1	1	
3	kede-s2.5.4.1	Fill mosquito ditches in selected areas of the refuge.	completed					
3	kede-s2.5.4.2	Monitor effects of filling ditches.	3-5 years	FWS, DOT, counties, WMD	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-s2.6.1.1	Eliminate incompatible uses on the refuge.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-s2.6.1.2	Continue to limit access to daytime use.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-s2.6.1.3	Continue to prohibit camping and military maneuvers.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-s2.6.1.4	Continue to limit all vehicles to paved roads except for refuge and emergency operations.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-s2.6.1.5	Erect fences around developments when deemed necessary.	completed					
3	kede-s2.6.2.1	Prohibit feedings; post signs.	continuous	FWS	1	1	1	
3	kede-s2.6.2.2	Prohibit feedings; distribute educational brochures.	continuous	FWS	2	2	2	Brochures are available at NKDR.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-s2.6.2.3	Prohibit feedings; increase enforcement of illegal feedings.	continuous	FWS				Task currently implemented on public lands and cost is included in managing agency's budget.
3	kede-s2.7	Continue rehabilitation program of Key deer.	as needed	FWS, NGO, private	3	3	3	Homosassa Springs Wildlife State Park currently maintains captive deer.
1	kede-s2.8	Investigate captive propagation options.	3-5 years	FWS, NGO, private	1	1	1	Captive propagation is deemed unnecessary at this time.
3	kede-s3.3.1	Determine the finite rate of increase for the Key deer population.	completed					See Lopez 2001 dissertation.
1	kede-s3.3.2	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	completed					Lopez 2001 dissertation includes PVA.
3	kede-s3.3.3	Determine the effective population size.	completed					Lopez 2001 dissertation estimates population size, age structure and sex ratio.
1	kede-s3.3.4	Determine the number of subpopulations or breeding herds necessary to maintain a stable or increasing population.	completed					Lopez 2001 dissertation includes this analysis.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-s3.3.5	Determine a stable age structure, sex ratio, and group size for the Key deer.	completed					Lopez 2001 dissertation includes this analysis.
3	kede-s3.3.6	Characterize social behavior and compare past behaviors with current trends.	completed					Lopez 2001 dissertation includes analysis and comparison to Hardin and Folk studies.
3	kede-s3.3.7	Continue necropsy of all Key deer mortalities.	continuous	FWS, universities	5	5	5	Necropsies are part of NKDR program.
3	kede-s3.3.8	Update and compile all existing roadkill data.	continuous	FWS, DOT, counties	1	1	1	Database currently up-to-date.
3	kede-s4.1	Develop methods to monitor demographic parameters.	completed					Lopez 2001 dissertation includes detailed methodology.
2	kede-s4.2	Conduct long-term monitoring of the status of the deer.	continuous	FWS, universities				NKDR has been conducting regular monitoring since 1966; TAMU also conducted studies in 1970 and 2000.
3	kede-s5.1	Provide funding to build and operate a visitor center.	completed					NKDR maintains visitor center.
3	kede-s5.2	Continue volunteer program.	continuous	FWS, NGO	4	4	4	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	kede-s5.3	Prepare informational material for the general public.	continuous	FWS, NGO, counties	5	5	5	Several brochures completed.
3	kede-s5.4	Provide public officials, planning agencies, and private developers with in formation on all phases of Key deer management and about potential threats.	continuous	FWS	2	2	2	MSRP includes current information.
2	kede-s5.5	Inform the public through media as to the problems with feeding.	continuous	FWS	15	15	15	
3	kede-s5.6	Inform the public through media as to the problem with animal trespass.	continuous	FWS	15	15	15	
3	kede-s6.0	Establish reclassification criteria.	1-2 years	FWS, universities	10	10		Several objectives presently stated in the MSRP recovery criteria.
2	kede-s7.0	Conduct multispecies recovery actions.	continuous	FWS, FWC, WMD, universities, counties				Cost difficult to determine because task involves extensive cooperation and cost sharing among a number of agencies.
1	posm-h1.1 [pr-2.6]	Protect pine rockland habitat of tiny polygala (Polygala smallii).	continuous	FWS, NPS, counties, NGO, private				Cost will vary depending on specific needs.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	posm-h1.2 [pr-1.1, 1.2]	Protect or acquire privately owned sites.	continuous	FWS, FWC, FDEP, counties, NGO				Cost dependent upon specific site and amount of land acquired.
1	posm-h2.1 [pr-1.4]	Eliminate physical degradation of habitat and restore to optimal conditions.	as needed	FWS, NPS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being restored.
1	posm-h2.2.1 [pr-8.0]	Implement necessary management.	continuous	FWS, NPS, counties, private				Cost dependent upon type management implemented.
1	posm-h2.2.2 [pr-2.2, 3.2]	Continue to conduct prescribed burns.	continuous	FWS, DOF, DERM, counties, NPS	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
1	posm-h2.3.1 [pr-1.0]	Eliminate human-caused degradation.	as needed	FWS, NPS, counties	2	2	2	
1	posm-h2.3.2 [pr-2.4, 3.4]	Control invasive plant species, particularly exotics.	continuous	FWS, NPS, counties, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres infested with exotics.
1	posm-h3.1	Continue to investigate and refine the habitat needs of P. smallii.	3 years	FWS, DERM, NGO, counties, private	30	30	30	
1	posm-h3.2 [pr-2.2, 3.2]	Investigate fire history and incorporate into management strategies.	2 years	FWS, DOF, counties	10	10		
2	posm-h4.0	Monitor sites with pine restoration programs to determine success.	continuous	FWS, NPS, NGO, counties	30	30	30	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	posm-h5.0 [pr-9.0]	Continue implementation of the fire education program and modify as necessary, any fire management education program that has been developed.	continuous	FWS, DERM, counties, private, NGO	15	15	15	
2	posm-s1.0	Conduct surveys to determine distribution and status of Polygala smallii.	2 years	FWS, NPS, DERM, counties, NGO, private	50	50		
2	posm-s2.1	Augment natural populations of P. smallii, where appropriate.	3 years	FWS, NGO, private	5	5	5	
1	posm-s2.1.1	Continue work with ex situ propagation and seed banks.	3 years	FWS, NGO, private	3	3	3	
2	posm-s2.1.2	Continue to identify potential reintroduction sites and reintroduce plants, where appropriate.	2 years	FWS, NPS, DERM, counties, NGO, private	10	10		
3	posm-s2.2.1	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	posm-s2.2.2	Encourage implementation of management plans.	continuous	FWS, DERM, counties, NGO, private				Cost dependent upon the management plan implemented.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	posm-s2.2.3	Continue to enforce take prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	posm-s3.1	Determine population size and viability of all populations.	3 years	FWS, DERM, counties, NGO, private	10	10	10	
1	posm-s3.2	Investigate the genetic relationship of distinct Polygala populations.	1 year	FWS, DERM, counties, NGO, private	45			
1	posm-s4.1	Collect existing and historical data and place in a central location.	2 years	FWS, DERM, counties, NGO, private	15	15		
2	posm-s4.2	Convene a meeting of all researchers.	1 year	FWS, DERM, counties, NGO, private	2			
2	posm-s4.3	Monitor status and success of all populations; change management practices if so indicated.	continuous	FWS, NPS, DERM, counties, NGO, private	8	8	8	
2	posm-s4.4	Monitor reintroduction success and modify procedures as necessary.	continuous	FWS, NPS, DERM, counties, NGO, private	7	7	7	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	posm-s5.0	Continue to provide public information about scrub, sandhill, and open coastal spoil habitat and its unique flora.	continuous	FWS, DERM, counties, private, NGO	15	15	15	

Scrub Implementation

aste = four petal pawpaw	cobr = short-leaved rosemary	hicu = Highland's scrub hypericum	sask = sand skink
btms = bluetail mole skink	crav = Avon Park harebells	lioh = scrub blazing star	waca = Carter's mustard
cefr = fragrant prickly-apple	dich = Garrett's mint	pach = papery whitlow-wort	zice = Florida ziziphus
chpy = pygmy fringe-tree	difr = scrub mint	poba = wireweed	sc = scrub
clfr = pigeon wings	diim = Lakela's mint	pole = Lewton's polygala	h = habitat task
clpe = Florida perforate cladonia	ercu = snakeroot	pomy = sandlace	s = species task

					Costs ($1,000s)			
Priority	Task Number	Task Description	Task Duration	Participants	FY 1	FY 2	FY 3	Comments
2	aste-h1.1 [sc-1.1, 2.2, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements.	continuous	FWS, counties				Cost dependent upon specific site and amount of land acquired.
2	aste-h1.2.1 [sc-2.1-2.2, 3.1]	Conduct prescribed burns for four-petal pawpaw (Asimina tetramera)	continuous	FWS, FDEP, NGO, DOF, counties, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
2	aste-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, NGO, counties	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	aste-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FDEP, counties				Task currently enforced and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	aste-h2.1 [sc-2.1-2.2, 3.1]	Restore natural fire regime.	continuous	FWS, FDEP, NGO, DOF, counties, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
2	aste-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FDEP, NGO, counties, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	aste-h3.0 [sc-8.1-8.3]	Continue habitat-level research projects.	2-3 years	FWS, FDEP, universities	25	25	25	
3	aste-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FDEP, counties	15	15	15	
3	aste-h5.0 [sc-9.0]	Provide public information about xeric vegetative communities and their unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	aste-s1.1.1	Continue surveys in Palm Beach and Martin Counties.	1 year	FWS, FDEP, counties	5			
2	aste-s1.1.2	Continue surveys on protected lands.	1 year	FWS, FDEP, counties	5			
3	aste-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FDEP	3	3	3	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	aste-s2.1 [sc-1.1, 6.0]	Acquire or otherwise protect privately-owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, counties, private				Cost dependent upon specific site and amount of land acquired.
1	aste-s2.2 [sc-1.0, 1.2-1.3, 2.0, 3.0, 6.0]	Protect populations of four-petal pawpaw on public lands.	continuous	FWS, FDEP, counties, USCG, BLM				Cost dependent upon type of protection provided.
2	aste-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in responsible agency's budget.
1	aste-s2.4	Continue ex situ conservation.	continuous	FWS, private	3	3	3	
2	aste-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	aste-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
1	aste-s2.6.1 [sc-2.4]	Establish a protocol for reintroduction.	1-2 years	FWS, FDEP, counties	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	aste-s2.6.2	Locate potential (re)introduction sites.	1 year	FWS, FDEP, counties	8			
1	aste-s2.6.3	(Re)introduce plants to protected sites.	3 years	FWS, FDEP, counties	10	4	4	
2	aste-s3.1 [sc-7.0]	Continue research to determine demographic information.	3 years	FWS, FDEP, universities	15	15	15	Several life history objectives revealed in Cox study.
2	aste-s3.2 [sc-7.0]	Once demographic data are known, conduct a population viability and risk assessment analysis.	3-5 years	FWS, private, universities	30	30	30	Individuals are long-lived, so conducting a population viability analysis may be difficult; risk assessment is feasible.
2	aste-s3.3 [sc-7.0]	Conduct research to assess management requirements of four-petal pawpaw.	3-5 years	FDEP, universities, private	20	20	20	
3	aste-s3.4 [sc-2.4]	Assess feasibility of relocating four-petal pawpaw.	2-3 years	FWS, universities, private	15	15	15	
2	aste-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FDEP, counties, universities	12	12	12	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	aste-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on four-petal pawpaw.	continuous	FWS, FDEP, counties, universities	12	12	12	
2	aste-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of four-petal pawpaw.	1-2 years	FWS, FDEP, counties, universities	8	8		Complete for Jonathan Dickinson State Park.
2	aste-s4.3 [sc-2.4]	Monitor introduced plants.	continuous	FWS, FDEP, counties	10	10	10	
3	aste-s5.0 [sc-9.0]	Provide public information about four-petal pawpaw.	continuous	FWS, FDEP, NGO, counties, private	10	5	5	
3	aste-s6.0	Establish delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		
3	btms-h1.1.1 [sc-1.1, 2.2, 6.0]	Continue Federal acquisition efforts for bluetail mole skink	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
3	btms-h1.1.2 [sc-1.1, 2.2, 6.0]	Support State acquisition efforts.	continuous	FWS, FDEP				Cost dependent upon specific site and amount of land acquired

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	btms-h1.1.3 [sc-1.1, 2.2, 6.0]	Encourage acquisition by non-governmental organizations.	continuous	FWS, NGO				Cost dependent upon specific site and amount of land acquired.
3	btms-h1.2.1 [sc-2.2]	Develop scrub habitat management guidelines.	1-2 years	FWS, private	15	15		To be done after four-petal pawpaw is reclassified to threatened status.
3	btms-h1.2.2 [sc-2.2]	Develop cooperative scrub management programs.	1-2 years	FWS, private	15	15		
3	btms-h1.2.3 [sc-1.2, 2.6, 3.2]	Control off-road access.	continuous	FWS, FWC, DOF, WMD, FDACS, NGO				Task currently enforced and cost is included in responsible agency's budget.
2	btms-h2.1 [sc-2.3, 3.2]	Control exotic species.	continuous	FWS, FWC, DOF, NGO, WMD, FDACS	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	btms-h2.2 [sc-2.1, 3.1]	Control overgrowth.	continuous	FWS, DOF, FDEP, FWC, USAF, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres overgrown with vegetation.
3	btms-h3.0 [sc-8.1-8.3]	Conduct research to determine habitat needs for this species.	3 years	FWS, FWC, universities, private	35	35	35	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	btms-h4.0 [sc-8.1-8.3]	Monitor status of bluetail mole skink habitat.	continuous	FWS, DOF, FDEP, FWC, NGO, USAF, private	10	10	10	
3	btms-h5.0 [sc-9.0]	Increase public awareness of the scrub ecosystem.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	btms-s1.1	Compile distribution data for bluetail mole skinks from all available sources.	1 year	FWS, FNAI, private	5			
2	btms-s1.2	Conduct distribution surveys to determine additional sites in need of protection.	1 year	FWS, FNAI, FWC	15			
2	btms-s2.1 [sc-1.3]	Conduct section 7 consultations on Federal activities that may affect bluetail mole skinks.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	btms-s2.2 [sc-1.1, 6.0]	Protect bluetail mole skinks on public and private lands.	continuous	FWS, DOF, FDEP, FWC, private, counties				Cost dependent upon type of protection provided.
3	btms-s2.3	Control domestic animal predation.	continuous	FWS, FWC, DOF, WMD, NGO	2	2	2	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	btms-s2.4 [sc-2.5, 3.5, 8.3]	Control pesticide use in or adjacent to bluetail mole skink habitat.	continuous	FWS, FWC, DOF, WMD, NGO, FDACS				Task currently implemented on public lands and cost is included in responsible agency's budget.
2	btms-s3.1 [sc-7.0]	Develop standardized survey techniques.	3-5 years	FWS, private, universities	5	5	5	
2	btms-s3.2 [sc-7.0]	Support studies of reproduction, fecundity, and longevity.	5 years	FWS, private, universities	35	35	35	
3	btms-s3.3 [sc-7.0]	Develop methods to determine home range size, age of dispersal, and dispersal distance of this species.	1-2 years	FWS, private	8	8		
3	btms-s4.0 [sc-3.4, 8.1-8.3]	Monitor bluetail mole skink populations.	continuous	FWS, FWC, USAF, private	10	10	10	
3	btms-s5.0 [sc-9.0]	Increase public awareness of bluetail mole skinks.	continuous	FWS, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cefr-h1.1 [sc-1.1, 2.1, 6.0]	Acquire habitat for fragrant prickly-apple cactus (Cereus fragrans)	continuous	FWS, FDEP				Includes conservation easements and other non fee title approaches. Cost dependent upon specific site and amount of land acquired.
3	cefr-h1.2.1 [sc-1.2, 2.6, 3.2]	Control off-road vehicle use.	continuous	FWS, FDEP				Task currently enforced and cost is included in responsible agency's budget.
1	cefr-h1.2.2 [sc-2.3, 3.2]	Control invasive and exotic plants.	continuous	FWS, FDEP, counties, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
1	cefr-h1.2.3 [sc-2.5, 3.5, 8.3]	Reduce impacts associated with herbicide application.	continuous	FWS, FDEP				Task currently implemented and cost is included in responsible agency's budget.
1	cefr-h1.2.4 [sc-2.0, 4.0]	Define and implement habitat management techniques.	continuous	FWS, FDEP				Cost dependent upon type of management implemented.
2	cefr-h1.2.5 [sc-2.0, 4.0]	Restore habitat.	continuous	FWS, FDEP	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.
3	cefr-h2.1 [sc-7.0]	Determine effects of fire.	2-3 years	FWS, universities	20	20	20	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	cefr-h2.2 [sc-7.0]	Determine effects of vegetative thinning.	2-3 years	FWS, FDEP	20	20	20	
3	cefr-h3.0 [sc-9.0]	Continue public information efforts about xeric vegetative communities and their unique biota.		FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	cefr-s1.1	Inventory known populations.	1-2 years	FWS, FDEP, counties, FNAI	5	5		
2	cefr-s1.2	Search for additional populations.	1 year	FWS, FNAI, FDEP	4			
2	cefr-s1.3	Map distribution of known populations and suitable habitat.	1 year	FWS, FDEP, counties, FNAI	4			Inventory and tagging of known individuals on public land is complete.
1	cefr-s2.1 [sc-1.1, 6.0]	Acquire or otherwise protect habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP, counties, private				Cost dependent upon specific site and amount of land acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cefr-s2.2 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
2	cefr-s2.3.1 [sc-2.4]	Characterize the habitat and identify suitable sites for experimental outplantings.	1 year	FWS, FDEP	12			
1	cefr-s2.3.2 [sc-2.4]	Conduct experimental outplantings.	3 years	FWS, FDEP, NGO	10	2	2	
1	cefr-s2.3.3 [sc-2.4]	(Re)introduce plants to protected sites.	3 years	FWS, FDEP, NGO	15	4	4	
2	cefr-s2.3.4 [sc-2.4]	Monitor experimental outplantings.	continuous	FWS, FDEP, NGO, universities	2	2	2	
2	cefr-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in collection; expand genetic diversity in collection.
2	cefr-s2.4.2 [sc-2.4]	Continue propagation and development of successful horticultural methods.	continuous	FWS, NGO, private	3	3	3	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	cefr-s2.4.3	Maintain ex situ collections.	continuous	FWS, NGO, private	2	2	2	
2	cefr-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	cefr-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
1	cefr-s3.1 [sc-7.0]	Study the reproductive biology of fragrant prickly-apple.	2 years	FWS, FDEP, universities	15	15		
1	cefr-s3.2 [sc-7.0, 8.1-8.3]	Study the response of fragrant prickly-apple to habitat management treatments.	3-5 years	FWS, FDEP, universities	15	15	15	
2	cefr-s3.3 [sc-7.0]	Conduct genetic studies to document genetic variation within and between populations.	1 year	FWS, universities	6			
1	cefr-s4.1 [sc-3.4, 8.1-8.3]	Initiate quarterly monitoring program.	continuous	FWS, FDEP	8	8	8	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	cefr-s4.2	Collect and archive existing and historical data.	1 year	FWS, FDEP, DOF, universities	5			
3	cefr-s5.0 [sc-9.0]	Provide public information about the fragrant prickly-apple cactus.	continuous	FWS, FDEP, counties	10	5	5	
3	cefr-s6.0	Establish delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		Several objectives presently stated in the MSRP recovery criteria.
3	chpy-h1.1 [sc-1.1, 2.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for pygmy fringe-tree (Chionanthus pygmaeus).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	chpy-h1.2.1 [sc-2.1-2.2, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, FDEP, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	chpy-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chpy-h2.1 [sc-2.1-2.2, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, FDEP, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	chpy-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, DOF, FDEP, FWC, NGO, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	chpy-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, DOF, NGO, universities	30	30	30	
3	chpy-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, DOF, FDEP, FWC, NGO, private	10	10	10	
3	chpy-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	chpy-s1.1.1	Survey scrub habitat in Hardee County.	1 year	FWS, FNAI, DOF	4			
3	chpy-s1.1.2	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI, DOF	4			
2	chpy-s1.1.3	Continue surveys on protected lands.	continuous	FWS, FNAI, DOF	2	2	2	Properties should be surveyed when acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chpy-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, DOF, private, NGO, FDEP, FWC, USAF	3	3	3	
3	chpy-s2.1 [sc-1.1, 6.0]	Protect populations on private land.	continuous	FWS, NGO				Cost dependent upon type of protection provided.
2	chpy-s2.2 [sc-1.2-1.3]	Protect populations on public lands.	continuous	FWS, DOF, FDEP, FWC, private				Cost dependent upon type of protection provided.
3	chpy-s2.3.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	
3	chpy-s2.3.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	
2	chpy-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	chpy-s2.4.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	chpy-s3.1 [sc-7.0]	Continue research to determine demographic information.	3-5 years	FWS, private, universities	30	30	30	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chpy-s3.2 [sc-7.0]	Identify the relationship pygmy fringe-tree has with the weevils that infest its fruits.	2-3 years	FWS, private, universities	10	10	10	
3	chpy-s3.3 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3 years	FWS, private, universities	30	30	30	
3	chpy-s3.4 [sc-7.0]	Conduct research to assess management requirements of pygmy fringe-tree.	2 years	FWS, FDEP, FWC	20	20		Long-lived shrub; mainly need to confirm that it resprouts.
3	chpy-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, DOF, FWC, FDEP, NGO	10	10	10	
3	chpy-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on pygmy fringe-tree.	continuous	FWS, DOF, FWC, FDEP, NGO	10	10	10	
3	chpy-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of pygmy fringe-tree.	1 year	FWS, FWC, FDEP, DOF, private	8			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	chpy-s5.0 [sc-9.0]	Provide public information about pygmy fringe-tree.	continuous	FWS, FWC, NGO, private	10	5	5	
2	clfr-h1.1 [sc-1.1, 2.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for pigeon wings (Clitoria fragrans).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	clfr-h1.2.1 [sc-2.1-2.2, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, FDEP, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	clfr-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	clfr-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, DOF, FDEP, FWC, USAF, NGO, private				Task currently enforced and cost is included in responsible agency's budget.
3	clfr-h2.1 [sc-2.1-2.2, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, FDEP, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	clfr-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, DOF, FDEP, FWC, NGO, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clfr-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	3-5 years	FWS, DOF, NGO, private, universities	30	30	30	
2	clfr-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, DOF, FDEP, FWC, NGO, private	12	12	12	
3	clfr-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	clfr-s1.1.1	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI	3			
2	clfr-s1.1.2	Continue surveys on protected lands.	continuous	FWS, FNAI, DOF, private, NGO, DOF, FDEP, FWC, USAF	4	4	4	Properties should be surveyed when acquired.
3	clfr-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FWC	3	3	3	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clfr-s2.1 [sc-1.1, 6.0]	Acquire or otherwise protect privately owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP, NGO, counties				Cost dependent upon specific site and amount of land acquired.
2	clfr-s2.2 [sc-1.2-1.3]	Protect populations on public lands.	continuous	FWS, DOF, FDEP, FWC, NGO, private, USAF				Cost dependent upon type of protection provided.
3	clfr-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
3	clfr-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	
3	clfr-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	
2	clfr-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clfr-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
3	clfr-s3.1 [sc-7.0]	Continue research to determine demographic information.	4 years	FWS, private	35	35	35	
3	clfr-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3 years	FWS, private, universities	30	30	30	
3	clfr-s3.3 [sc-7.0]	Conduct research to assess management requirements of pigeon wings.	4 years	FWS, private	25	25	25	
3	clfr-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, DOF, FWC, NGO, private	10	10	10	
3	clfr-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on pigeon wings.	continuous	FWS, FWC, DOF, FDEP, USAF, NGO, private	10	10	10	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clfr-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of pigeon wings.	1 year	FWS, FWC, FDEP, DOF, private	5			
3	clfr-s5.0 [sc-9.0]	Provide public information about pigeon wings.	continuous	FWS, FWC, NGO, private	10	5	5	
2	clpe-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Florida perforate cladonia (Cladonia perforata), a lichen.	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	clpe-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	clpe-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	clpe-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, FDEP, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clpe-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, DOF, FDEP, FWC, NGO, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	clpe-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, DOF, NGO, private, universities	35	35	35	
3	clpe-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, DOF, FDEP, FWC, NGO, private	15	15	15	
3	clpe-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	clpe-s1.1.1	Survey scrub and high pine habitat for Florida perforate cladonia in Osceola, Hardee, and Hendry Counties.	1 year	FWS, FNAI, DOF	8			
2	clpe-s1.1.2	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI, DOF	8			
2	clpe-s1.1.3	Continue surveys on protected lands.	continuous	FWS, FNAI, DOF	4	4	4	Properties should be surveyed when acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	clpe-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FWC	3	3	3	
3	clpe-s2.1 [sc-1.1, 6.0]	Protect populations on private land through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, BLM, DOF, FWC				Cost dependent upon type of protection provided.
1	clpe-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, BLM, DOF, FWC				Cost dependent upon type of protection provided.
2	clpe-s2.3	Prepare post-hurricane restoration plans for the southeast Florida counties.	1 year	FWS, FDEP	5			
2	clpe-s2.4.1 [sc-1.3]	Initiate section 7 consultations when Federal activities may affect Florida perforate cladonia.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	clpe-s2.4.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	clpe-s2.5	Initiate ex situ conservation of Florida perforate cladonia.	continuous	FWS, private	3	3	3	Simpler method may be to remove lichens before prescribed burns and replace them afterward.
1	clpe-s3.1 [sc-7.0]	Continue research to determine demographic information.	3-5 years	FWS, private, universities	35	35	35	
1	clpe-s3.2 [sc-7.0, 8.1-8.3]	Continue research to better understand the mechanisms of establishment of Florida perforate cladonia, the effects of translocations of fragments, and the effects of fire on survival.	3-5 years	FWS, private, universities	30	30	30	
2	clpe-s3.3 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	30	30	30	
2	clpe-s3.4 [sc-7.0]	Conduct research to assess management requirements of Florida perforate cladonia.	5 years	FWS, private, universities	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	clpe-s4.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, DOF, FWC, NGO, private	15	15	15	
2	clpe-s4.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Florida perforate cladonia.	continuous	FWS, FWC, private	15	15	15	
2	clpe-s4.3 [sc-7.0]	Develop a quantitative description of the population structure of Florida perforate cladonia.	1 year	FWS, private	6			
3	clpe-s5.0 [sc-9.0]	Provide public information about Florida perforate cladonia.	continuous	FWS, FWC, NGO, private	10	5	5	
3	clpe-s6.0	Establish delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		This task will not begin until the lichen is reclassified to threatened status.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cobr-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for short-leaved rosemary (Conradina brevifolia).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
1	cobr-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, FWC, FDEP, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned; high priority due to species' limited distribution.
2	cobr-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	cobr-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, DOF, FWC				Task currently enforced and cost is included in responsible agency's budget.
3	cobr-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, FWC, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	cobr-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, DOF, FDEP, FWC, NGO, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	cobr-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, DOF, NGO, private, universities	30	30	30	
2	cobr-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, DOF, FDEP, FWC, NGO, private	10	10	10	
3	cobr-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	cobr-s1.1.1	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI, DOF	2			Lake Wales Ridge has probably been adequately surveyed; species has a very limited known distribution, restricted to the Ridge
2	cobr-s1.1.2	Continue surveys on protected lands.	continuous	FWS, FWC, DOF, private	4	4	4	Properties should be surveyed when acquired; catalog all existing sites, especially important because of species' narrow distribution.
3	cobr-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FWC	3	3	3	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cobr-s2.1 [sc-1.1, 6.0]	Acquire or protect privately owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon specific site and amount of land acquired.
1	cobr-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.
3	cobr-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
1	cobr-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	cobr-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	Currently in Bok's collection.
2	cobr-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	cobr-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	cobr-s3.1 [sc-7.0]	Continue research to determine demographic information.	3-5 years	FWS, private	25	25	25	
2	cobr-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	30	30	30	
2	cobr-s3.3 [sc-7.0]	Conduct research to assess management requirements of short-leaved rosemary.	5 years	FWS, private	30	30	30	
2	cobr-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, DOF, FWC, NGO, private	10	10	10	
1	cobr-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on short-leaved rosemary.	continuous	FWS, FWC, FDEP	10	10	10	
2	cobr-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of short-leaved rosemary.	1 year	FWS, DOF, FDEP, private	8			

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	cobr-s5.0 [sc-9.0]	Provide public information about short-leaved rosemary.	continuous	FWS, FWC, NGO, private	10	5	5	
2	crav-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements.	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	crav-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	crav-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	crav-h1.2.3 [sc-1.2, 2.6, 3.2]	Evaluate the effects of off-road vehicles on sensitive lands and limit access where damage to the habitat is documented.	1-2 years	FWS, FWC, FDEP, DOF	15	15		
3	crav-h1.2.4 [sc-2.0, 4.0]	Restore areas to suitable habitat.	continuous	FWS, FWC, FDEP	1/acre	1/acre	1/acre	Total cost dependent upon number of acres being restored.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	crav-h1.2.5 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	10	10	10	
3	crav-h2.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
1	crav-s1.0	Determine current distribution of Avon Park harebells in Polk and Highlands Counties.	completed					FNAI survey completed this task.
2	crav-s2.1 [sc- 1.0]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.
2	crav-s2.2	Continue ex situ conservation.	continuous	FWS, private	2	2	2	Currently in Bok's collection.
1	crav-s2.3	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	crav-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	crav-s2.4.2	Encourage implementation of management plans.	continuous	FWS, FDEP, FWC, DOF				Task currently implemented and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	crav-s2.4.3 [sc-1.3]	Continue to enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	crav-s3.1 [sc-7.0]	Continue research to determine species demographics.	3-5 years	FWS, private	35	35	35	
2	crav-s3.2 [sc-7.0]	Develop population viability and risk assessment.	3 years	FWS, private, universities	30	30	30	
2	crav-s3.3 [sc-7.0]	Conduct research to assess management requirements of Avon Park harebells.	2-3 years	FWS, NGO, private	30	30	30	
2	crav-s4.1	Collect existing and historical data and place in a central location.	continuous	FWS, FNAI, NGO, private	5	5	5	
3	crav-s5.0 [sc-9.0]	Provide public information about Avon Park harebells.	continuous	FWS, FWC, NGO, private	10	5	5	
3	crav-s6.0	Establish reclassification criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		To be done after population stabilized. Research by Archbold Biol. Station reported in 2003 may be helpful.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	dich-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Garrett's mint (Dicerandra christmanii).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	dich-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, FDEP, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	dich-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
1	dich-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FDEP, FWC				Task currently enforced and cost is included in responsible agency's budget.
3	dich-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned; a fire at Flamingo Villas in 2001 probably means no more burning is needed for 15 or more years.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	dich-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FDEP, FWC, NGO, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
2	dich-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	2-3 years	FWS, DOF, NGO, private, universities	20	20	20	
2	dich-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	8	8	8	
3	dich-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	dich-s1.1.1	Continue surveys in Highlands County.	completed					Survey is complete, but monitoring is still essential.
1	dich-s1.1.2	Continue surveys on protected lands.	continuous	FWS, FWC, NGO, private	2	2	2	History indicates that new populations of Dicerandra mints could be found; properties should be surveyed when acquired.
3	dich-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FWC	2	2	2	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	dich-s2.1 [sc-1.1, 6.0]	Acquire or otherwise protect privately owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon specific site and amount of land acquired.
1	dich-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, private				Cost dependent upon type of protection provided.
3	dich-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
1	dich-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	dich-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	Currently in Bok's collection.
2	dich-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	dich-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	dich-s2.6.1 [sc-2.4]	Establish a protocol for reintroduction.	1-2 years	FWS, private	7	7		
1	dich-s2.6.2 [sc-2.4]	Locate potential (re)introduction sites.	1 year	FWS, NGO, private, DOF, FWC	5			
1	dich-s2.6.3 [sc-2.4]	(Re)introduce plants to protected sites.	3 years	FWS, private	8	4	4	
1	dich-s3.1 [sc-7.0]	Continue research to determine demographic information.	3 years	FWS, private, universities	20	20	20	
3	dich-s3.2 [sc-7.0]	Assess genetic variability in Garrett's mint.	completed					See Castanea 66: 98-114.
1	dich-s3.3 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3 years	FWS, private, universities	25	25	25	A population viability analysis would be feasible.
2	dich-s3.4 [sc-7.0]	Conduct research to assess management requirements of Garrett's mint.	3 years	FWS, private, universities	25	25	25	
1	dich-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, NGO, private	7	7	7	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	dich-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Garrett's mint.	continuous	FWS, private	7	7	7	
2	dich-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of Garrett's mint.	1 year	FWS, DOF, FDEP, private	4			
2	dich-s4.3 [sc-2.4]	Monitor re-introduced plants.	continuous	FWS, FWC, private	4	4	4	
3	dich-s5.0 [sc-9.0]	Provide public information about Garrett's mint.	continuous	FWS, FWC, NGO, private	10	5	5	
1	difr-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for scrub mint (Dicerandra frutescens).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	difr-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	difr-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	difr-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, private				Task currently enforced and cost is included in responsible agency's budget.
3	difr-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	difr-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, private	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
2	difr-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	3-5 years	FWS, universities, private	15	15	15	
2	difr-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, private	5	5	5	
3	difr-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
1	difr-s1.1.1	Continue surveys in Highlands County.	1 year	FWS, FNAI	2			
3	difr-s1.1.2	Continue surveys on protected lands.	completed					Surveys completed on Archbold and the few nearby sites which are the only protected lands.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	difr-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, FNAI, FWC	2	2	2	
2	difr-s1.3	Determine identity of Difr population outside accepted scrub mint range.	2 years	FWS, universities	3	3		
1	difr-s2.1 [sc-1.1, 6.0]	Acquire or otherwise protect privately owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon specific site, amount of land acquired, or type of protection provided.
2	difr-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOT, private				Cost dependent upon type of protection provided.
3	difr-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
1	difr-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok’s collection.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	difr-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	
2	difr-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	difr-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	difr-s2.6.1 [sc-2.4]	Establish a protocol for reintroduction.	1-2 years	FWS, private	3	3		
2	difr-s2.6.2 [sc-2.4]	Locate potential (re)introduction sites.	1 year	FWS, NGO, private, DOF, FWC	2			
2	difr-s2.6.3 [sc-2.4]	Reintroduce plants to protected sites.	3 years	FWS, private	5	5	5	
1	difr-s3.1 [sc-7.0]	Continue research to determine demographic information.	3 years	FWS, private	20	20	20	
3	difr-s3.2 [sc-7.0]	Assess genetic variability for scrub mint.	completed					See Castanea 66: 98-114.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	difr-s3.3 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	25	25	25	In progress at Archbold.
2	difr-s3.4 [sc-7.0]	Conduct research to assess management requirements of scrub mint.	3 years	FWS, private	20	20	20	
2	difr-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, private	5	5	5	
1	difr-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on scrub mint.	continuous	FWS, private	5	5	5	
2	difr-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of scrub mint.	1 year	FWS, private	4			Researchers at Archbold Biological Station are preparing to publish a population viability analysis.
2	difr-s4.3 [sc-2.4]	Monitor reintroduced plants.	continuous	FWS, private	3	3	3	
3	difr-s5.0 [sc-9.0]	Provide public information about scrub mint.	continuous	FWS, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	diim-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Lakela's mint (Dicerandra immaculata).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	diim-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, private	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres burned.
3	diim-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
2	diim-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where Lakela’s mint is growing.	continuous	FWS, private, counties				Task currently enforced and cost is included in responsible agency's budget.
3	diim-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, private, counties	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres burned.
3	diim-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, counties	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
2	diim-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, universities	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	diim-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, counties, private	3	3	3	
3	diim-h5.0 [sc-9.0]	Provide public information about xeric vegetative communities and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	diim-s1.1	Conduct surveys for Lakela's mint.	1 year	FWS, FDEP, counties	2			
3	diim-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	2	2	2	
1	diim-s2.1	Protect habitat through acquisition, conservation easements or agreements with landowners.	continuous	FWS, counties				Cost dependent upon type of protection provided.
1	diim-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, counties				Cost dependent upon type of protection provided.
2	diim-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	diim-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	diim-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	Introduced population at Hobe Sound National Wildlife Refuge is backup for Harbor Branch population; currently in Bok's collection.
2	diim-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	diim-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
1	diim-s2.6.1 [sc-2.4]	Establish a protocol for reintroduction.	1 year	FWS, private, counties	3			
1	diim-s2.6.2 [sc-2.4]	Locate potential (re)introduction sites.	1 year	FWS, counties, private	1			
1	diim-s2.6.3 [sc-2.4]	(Re)introduce plants to protected sites.	3 years	FWS, private, counties	5	5	5	
1	diim-s3.1 [sc-7.0]	Conduct research to determine demographic information.	3 years	FWS, private, universities	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	diim-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analyses.	1-2 years	FWS, private, universities	30	30		
1	diim-s3.3 [sc-7.0]	Conduct research to assess management requirements of Lakela's mint.	3 years	FWS, universities	15	15	15	
2	diim-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, counties	3	3	3	
1	diim-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Lakela's mint.	continuous	FWS, counties	3	3	3	
2	diim-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of Lakela's mint.	1 year	FWS, private	3			
2	diim-s4.3 [sc-2.4]	Monitor re-introduced Lakela's mint plants.	continuous	FWS, counties	1	1	1	
3	diim-s5.0 [sc-9.0]	Provide public information about Lakela's mint.	continuous	FWS, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	ercu-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for snakeroot (Eryngium cuneifolium).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	ercu-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	ercu-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	ercu-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where snakeroot is growing.	continuous	FWS, FWC, FDEP, DOF, private				Task currently enforced and cost is included in responsible agency's budget.
3	ercu-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	ercu-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	ercu-h3.0 [sc-8.1-8.3]	Continue habitat-level research projects.	3-5 years	FWS, private	15	15	15	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	ercu-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF, private	4	4	4	
3	ercu-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	ercu-s1.1.1	Continue surveys in Highlands County.	completed					Completed by FNAI survey.
2	ercu-s1.1.2	Continue surveys on protected lands.	continuous	FWS, DOF, FWC, FDEP	1	1	1	Properties should be surveyed when acquired.
2	ercu-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	2	2	2	
1	ercu-s2.1 [sc-1.1, 6.0]	Protect habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.
1	ercu-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	ercu-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
2	ercu-s2.4	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	ercu-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	ercu-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	ercu-s3.1 [sc-7.0]	Continue research to determine demographic information.	1-2 years	FWS, private, universities	15	15		Research at Archbold has developed a population viability analysis.
2	ercu-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	1-2 years	FWS, private, universities	30	30		Archbold research demonstrated that large populations are needed.
2	ercu-s3.3 [sc-7.0]	Conduct research to assess management requirements of snakeroot.	1-2 years	FWS, private	15	15		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	ercu-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, NGO, private	4	4	4	
2	ercu-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on snakeroot.	continuous	FWS, FWC, FDEP, private	4	4	4	
2	ercu-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of snakeroot.	1 year	FWS, FWC, FDEP, private	3			Mostly completed by Archbold research.
3	ercu-s5.0 [sc-9.0]	Provide public information about snakeroot.	continuous	FWS, FWC, NGO, private	10	5	5	
3	ercu-s6.0	Develop delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		Delisting criteria are to be developed after the species is reclassified to threatened status.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	hycu-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Highlands scrub hypericum (Hypericum highlandensis).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	hycu-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	hycu-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	hycu-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, FDEP, DOF, private				Task currently enforced and cost is included in responsible agency's budget.
3	hycu-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	hycu-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	hycu-h3.0 [sc-8.1-8.3]	Continue habitat-level research projects.	2-3 years	FWS, NGO, private	20	20	20	Ongoing monitoring of fire-effects implemented.
2	hycu-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF, private	7	7	7	
3	hycu-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	hycu-s1.1.1	Continue surveys in Polk and Highlands Counties.	1 year	FWS, private	4			FNAI survey largely fulfilled this task.
2	hycu-s1.1.2	Continue surveys on protected lands.	continuous	FWS, NGO, DOF, FWC, FDEP	1	1	1	Properties should be surveyed when acquired.
3	hycu-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	3	3	3	
2	hycu-s2.1 [sc-1.1, 6.0]	Protect habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	hycu-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.
2	hycu-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
3	hycu-s2.4	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
2	hycu-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	hycu-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	hycu-s3.1 [sc-7.0]	Continue research to determine demographic information.	1-2 years	FWS, private, universities	20	20		Research at Archbold has produced a population viability analysis.
2	hycu-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	1-2 years	FWS, private, universities	30	30		Archbold research shows that large populations are needed.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	hycu-s3.3 [sc-7.0]	Conduct research to assess management requirements of Highlands scrub hypericum.	1-2 years	FWS, private	20	20		
2	hycu-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, NGO, private	5	5	5	
2	hycu-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Highlands scrub hypericum.	continuous	FWS, FWC, FDEP, private	5	5	5	
2	hycu-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of Highlands scrub hypericum.	1 year	FWS, FWC, FDEP, private	4			
3	hycu-s5.0 [sc-9.0]	Provide public information about Highlands scrub hypericum.	continuous	FWS, FWC, NGO, private	10	5	5	
3	hycu-s6.0	Develop delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		Delisting criteria are to be developed after the species is reclassified to threatened status.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	lioh-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for scrub blazing star (Liatris ohlingerae).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	lioh-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	lioh-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	lioh-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, FDEP, DOF				Task currently enforced and cost is included in responsible agency's budget.
3	lioh-h2.1 [sc-2.1, 3.1]	Restore a natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	lioh-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	lioh-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, private, universities	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	lioh-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	10	10	10	
3	lioh-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	lioh-s1.1.1	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI	4			FNAI survey largely fulfilled this task.
2	lioh-s1.1.2	Continue surveys on protected lands.	continuous	FWS, NGO, DOF, FWC, FDEP	1	1	1	Properties should be surveyed when acquired.
3	lioh-s1.2	Maintain distribution of known populations and suitable habitat in a GIS database.	continuous	FWS, private	3	3	3	
3	lioh-s2.1 [sc-1.1, 6.0]	Protect populations on private land through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.
2	lioh-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	lioh-s2.3.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
3	lioh-s2.3.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	Currently in Bok's collection.
2	lioh-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	lioh-s2.4.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	lioh-s3.1 [sc-7.0]	Continue research to determine demographic information.	5 years	FWS, private	20	20	20	
3	lioh-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	30	30	30	
2	lioh-s3.3 [sc-7.0]	Conduct research to assess management requirements of scrub blazing star.	5 years	FWS, DOF, private	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	lioh-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, NGO, private	10	10	10	
3	lioh-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on scrub blazing star.	continuous	FWS, FWC, FDEP, private	10	10	10	
3	lioh-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of scrub blazing star.	1 year	FWS, FWC, FDEP, DOF, private	5			
3	lioh-s5.0 [sc-9.0]	Provide public information about scrub blazing star.	continuous	FWS, FWC, NGO, private	10	5	5	
3	lioh-s6.0	Develop delisting criteria.	1-2 years	FWS, FDEP, counties, universities	10	10		Several objectives presently stated in the MSRP recovery criteria.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pach-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for papery whitlow-wort (Paronychia chartacea ssp. chartacea).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	pach-h1.2.1 [sc-2.1, 3.1]	Perform prescribed fires.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	pach-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	pach-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, FDEP, DOF, NGO, counties				Task currently enforced and cost is included in responsible agency's budget.
3	pach-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	pach-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pach-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	3-5 years	FWS	25	25	25	
2	pach-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	12	12	12	
3	pach-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	pach-s1.1.1	Continue surveys in Polk, Osceola, and Highlands Counties.	completed					Completed by FNAI survey.
3	pach-s1.1.2	Continue surveys on protected lands.	continuous	FWS, NGO, DOF, FWC, FDEP	1	1	1	Properties should be surveyed when acquired.
3	pach-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	3	3	3	
3	pach-s2.1 [sc-1.1, 6.0]	Protect privately-owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pach-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, DOF, FWC, private				Cost dependent upon type of protection provided.
3	pach-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
3	pach-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
3	pach-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	
2	pach-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	pach-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
3	pach-s3.1 [sc-7.0]	Continue research to determine demographic information.	3 years	FWS, private, universities	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pach-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3 years	FWS, private, universities	30	30	30	
3	pach-s3.3 [sc-7.0]	Conduct research to assess management requirements of papery whitlow-wort.	5 years	FWS, DOF, private	25	25	25	
3	pach-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, NGO, private	10	10	10	
3	pach-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on papery whitlow-wort.	continuous	FWS, FWC, FDEP, private	10	10	10	
2	pach-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of papery whitlow-wort.	1 year	FWS, FWC, FDEP, DOF, private	5			
3	pach-s5.0 [sc-9.0]	Provide public information about papery whitlow-wort.	continuous	FWS, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	poba-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for wireweed (Polygonella basiramia).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	poba-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, USAF, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	poba-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	poba-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, USAF, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	poba-h2.2	Ensure natural populations.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced for natural populations.
3	poba-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, private	20	20	20	
2	poba-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF, USAF	8	8	8	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	poba-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	poba-s1.1.1	Continue surveys in Polk and Highlands Counties.	1 year	FWS, NGO, DOF, FWC, FDEP	4			FNAI survey largely fulfilled this task.
3	poba-s1.1.2	Continue surveys on protected lands.	continuous	FWS, NGO, DOF, FWC, FDEP	1	1	1	Properties should be surveyed when acquired.
3	poba-s1.2	Wireweed identification.	1 year	FWS, universities	2			A matter of comparing herbarium specimens; may need to make some new collections for voucher purposes.
3	poba-s1.3	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	3	3	3	
3	poba-s2.1 [sc-1.1, 6.0]	Protect populations on private land through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	poba-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, FDEP, FWC, USAF, private				Cost dependent upon type of protection provided.
3	poba-s2.3.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	Currently in Bok's collection.
3	poba-s2.3.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	Currently in Bok's collection.
3	poba-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	poba-s2.4.2 [sc-1.3]	Enforce take prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	poba-s3.1 [sc-7.0]	Conduct research to determine demographic information.	1-2 years	FWS, private	20	20		
3	poba-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	30	30	30	
3	poba-s3.3 [sc-7.0]	Conduct research to assess management requirements of wireweed.	2-3 years	FWS, FWC, DOF, USAF, private	20	20	20	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	poba-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, USAF, NGO, private	10	10	10	
3	poba-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on wireweed.	continuous	FWS, FWC, FDEP, private	10	10	10	
2	poba-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of wireweed.	1 year	FWS, FWC, FDEP, DOF, private	4			
3	poba-s5.0 [sc-9.0]	Provide public information about wireweed.	continuous	FWS, FWC, NGO, private	10	5	5	
2	pole-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Lewton's polygala (Polygala lewtonii).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	pole-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1.5/ acre	1.5/ acre	1.5/ acre	Total cost dependent upon number of acres burned.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pole-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	pole-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, DOF, FDEP				Task currently enforced and cost is included in responsible agency's budget.
3	pole-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1.5/acre	1.5/acre	1.5/acre	Total cost dependent upon number of acres burned.
3	pole-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	pole-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, DOF, private	30	30	30	Results from Ocala National Forest sandhills study on Carter Creek partially fulfills task.
2	pole-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	12	12	12	
3	pole-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pole-s1.1.1	Survey scrub, high pine, and turkey oak habitats in Osceola and Hardee Counties.	1 year	FWS, FNAI	8			Lake Wales Ridge adequately surveyed by FNAI.
2	pole-s1.1.2	Continue surveys on protected lands.	continuous	FWS, DOF, FDEP, NGO	1	1	1	Properties should be surveyed when acquired.
3	pole-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	4	4	4	
2	pole-s2.1 [sc-1.1, 6.0]	Protect populations on private land through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP, NGO				Cost dependent upon type of protection provided.
2	pole-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, FDEP, private				Cost dependent upon type of protection provided.
2	pole-s2.3	Develop ex situ collection.	continuous	FWS, private	2	2	2	Currently in Bok’s collection.
3	pole-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pole-s2.4.2 [sc-1.3]	Enforce take prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	pole-s3.1 [sc-7.0]	Continue research to determine demographic information.	5 years	FWS, private	25	25	25	
3	pole-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3-5 years	FWS, private, universities	30	30	30	
2	pole-s3.3 [sc-7.0]	Conduct research to assess management requirements of Lewton's polygala.	5 years	FWS, NGO, private	25	25	25	
2	pole-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, FDEP, DOF, NGO, private	10	10	10	
3	pole-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Lewton's polygala.	continuous	FWS, FWC, FDEP, private	10	10	10	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	pole-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of Lewton's polygala	1 year	FWS, FWC, FDEP, DOF, private	5			
3	pole-s5.0 [sc-9.0]	Provide public information about Lewton's polygala.	continuous	FWS, FWC, NGO, private	10	5	5	
3	pomy-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for sandlace (Polygala myriophylla).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	pomy-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	pomy-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	pomy-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	pomy-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	pomy-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, private	30	30	30	
2	pomy-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, FWC, FDEP, DOF	10	10	10	
3	pomy-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
3	pomy-s1.1.1	Continue surveys in Polk, Osceola, and Highlands Counties.	1 year	FWS, FNAI, FWC, DOF, FDEP, NGO	5			
3	pomy-s1.1.2	Continue surveys on protected lands.	continuous	FWS, FNAI, FWC, DOF, FDEP, NGO	1	1	1	Properties should be surveyed when acquired.
3	pomy-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	4	4	4	
3	pomy-s2.1 [sc-1.1, 6.0]	Protect populations on private land through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	pomy-s2.2 [sc-1.2, 1.3]	Protect sandlace populations on public lands.	continuous	FWS, FDEP, FWC, private				Cost dependent upon type of protection provided.
3	pomy-s2.3	Develop ex situ and germ plasm collections of sandlace.	continuous	FWS, private	3	3	3	Currently in Bok's collection.
3	pomy-s2.4.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
3	pomy-s2.4.2 [sc-1.3]	Enforce take prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	pomy-s3.1 [sc-7.0]	Continue research to determine demographic information.	5 years	FWS, universities, private	25	25	25	
3	pomy-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	3-5 years	FWS, private, universities	30	30	30	
2	pomy-s3.3 [sc-7.0]	Conduct research to assess management requirements of sandlace.	4 years	FWS, private	25	25	25	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	pomy-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, DOF, FDEP	10	10	10	
3	pomy-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on sandlace.	continuous	FWS, FWC, FDEP, private	10	10	10	
2	pomy-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of sandlace.	1 year	FWS, FWC, FDEP, DOF, private	5			
3	pomy-s5.0 [sc-9.0]	Provide public information about sandlace.	continuous	FWS, FWC, NGO, private	10	5	5	
3	sask-h1.1.1 [sc-1.1, 6.0]	Continue Federal acquisition efforts for sand skink.	continuous	FWS				Cost dependent upon specific site and amount of land acquired.
3	sask-h1.1.2 [sc-1.1, 6.0]	Support State acquisition efforts.	continuous	FWS, FDEP				Cost dependent upon specific site and amount of land acquired.
3	sask-h1.1.3 [sc-1.1, 6.0]	Encourage acquisition by non-government organizations.	continuous	FWS, NGO				Cost dependent upon specific site and amount of land acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	sask-h1.2.1	Develop scrub habitat management guidelines.	1-2 years	FWS, private	15	15		
3	sask-h1.2.2	Develop cooperative scrub management programs.	1-2 years	FWS, private	15	15		
3	sask-h1.2.3 [sc-1.2, 2.6, 3.2]	Control off-road access.	continuous	FWS, FWC, DOF, WMD, FDACS, NGO				Task currently enforced and cost is included in responsible agency's budget.
2	sask-h2.1 [sc-2.3, 3.2]	Control exotic species.	continuous	FWS, FWC, DOF, NGO, WMD, FDACS	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	sask-h2.2 [sc-2.1, 3.1]	Control overgrowth.	continuous	FWS, DOF, FDEP, FWC, USAF, NGO, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres overgrown with vegetation.
3	sask-h3.0 [sc-8.1-8.3]	Conduct research to determine habitat needs for this species.	3 years	FWS, FWC, universities, private	35	35	35	
3	sask-h4.0 [sc-8.1-8.3]	Monitor status of sand skink habitat.	continuous	FWS, DOF, FDEP, FWC, NGO, USAF, private	12	12	12	
3	sask-h5.0 [sc-9.0]	Increase public awareness of the scrub ecosystem.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	sask-s1.1	Compile distribution data for sand skinks from all available sources.	1 year	FWS, FNAI, private	5			
3	sask-s1.2 [sc- 7.0]	Conduct distribution surveys to determine additional sites in need of protection.	1 year	FWS, FNAI, FWC	15			
3	sask-s2.1 [sc-1.3]	Conduct section 7 consultations on Federal activities that may affect sand skinks.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.
2	sask-s2.2	Protect sand skinks on public lands.	continuous	FWS, DOF, FWC, counties				Cost dependent upon type of protection provided.
2	sask-s2.3 [sc-1.1, 1.3]	Protect sand skinks on private lands.	continuous	FWS, DOF, FDEP, FWC, private, counties				Cost dependent upon type of protection provided.
3	sask-s2.4 [sc-2.5, 3.5, 8.3]	Control pesticide use in or adjacent to sand skink habitat.	continuous	FWS, FWC, DOF, WMD, NGO, FDACS				Task currently implemented on public lands and cost is included in responsible agency's budget.
2	sask-s3.1 [sc-7.0]	Develop standardized survey techniques.	1-2 years	FWS, private, universities	10	10		

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	sask-s3.2 [sc-7.0]	Support studies of reproduction, fecundity, and longevity.	5 years	FWS, private, universities	35	35	35	
3	sask-s4.0 [sc-3.4, 8.1-8.3]	Monitor sand skink populations.	continuous	FWS, FWC, private	10	10	10	
3	sask-s5.0 [sc-9.0]	Increase public awareness of sand skinks.	continuous	FWS, FWC, NGO, private	10	5	5	
2	waca-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Carter's mustard (Warea carteri).	continuous	FWS, FDEP, NGO				Cost dependent upon specific site and amount of land acquired.
2	waca-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	waca-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	waca-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, FWC, FDEP, DOF				Task currently enforced and cost is included in responsible agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	waca-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, FWC, FDEP, DOF	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	waca-h2.2 [sc-2.4]	Enhance sites with native plant species.	continuous	FWS, FWC, FDEP, DOF	.5/acre	.5/acre	.5/acre	Total cost dependent upon number of acres being enhanced.
3	waca-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, private, universities	25	25	25	
2	waca-h4.0 [sc-8.1-8.3]	Monitor habitat and ecological processes.	continuous	FWS, FWC, FDEP, DOF, NGO	10	10	10	
3	waca-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	waca-s1.1.1	Survey scrub habitat in the coastal counties.	1 year	FWS, FNAI, counties, volunteers	4			
2	waca-s1.1.2	Continue surveys in Polk and Highlands Counties.	1 year	FWS, FNAI	4			FNAI surveys for “Warea archipelago” CARL proposal accomplished basic survey needs.
2	waca-s1.1.3	Continue surveys on protected lands.	continuous	FWS, DOF, FDEP, FWC, NGO	1	1	1	Properties should be surveyed when acquired.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	waca-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	3	3	3	
2	waca-s2.1 [sc-1.1, 6.0]	Protect privately-owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, FDEP, NGO, private				Cost dependent upon type of protection provided.
2	waca-s2.2 [sc-1.2, 1.3]	Protect populations on public lands.	continuous	FWS, FWC, DOF, BLM, private				Cost dependent upon type of protection provided.
2	waca-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
2	waca-s2.4	Conserve germ plasm.	continuous	FWS, private	1	1	1	
3	waca-s2.5.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	waca-s2.5.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	waca-s3.1 [sc-7.0]	Continue research to determine demographic information.	5 years	FWS, private, universities	25	25	25	Archbold Biological Station suggests a PVA can be developed based on existing monitoring data. It would be the first PVA for an annual on the Lake Wales Ridge.
2	waca-s3.2 [sc-7.0]	Once demographic data are known, conduct population viability and risk assessment analysis.	2-3 years	FWS, private, universities	30	30	30	
2	waca-s3.3 [sc-7.0]	Conduct research to assess management requirements of Carter's mustard.	3 years	FWS, private, universities	25	25	25	Archbold has been conducting seed bank research for several years.
2	waca-s4.1.1 [sc-3.4, 8.1-8.3]	Monitor to detect changes in demographic characteristics.	continuous	FWS, FWC, DOF, FDEP, private	10	10	10	
2	waca-s4.1.2 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Carter's mustard.	continuous	FWS, FWC, FDEP, DOF, NGO, private	10	10	10	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
2	waca-s4.2 [sc-7.0]	Develop a quantitative description of the population structure of Carter's mustard.	1 year	FWS, FWC, FDEP, DOF, private	4			
3	waca-s5.1 [sc-9.0]	Public outreach efforts must also continue to address the increasing concern that horticultural demand for this and other rare species may not benefit conservation of threatened and endangered species.	continuous	FWS, FWC, NGO, private	10	5	5	
3	waca-s5.2	Private landowners should be made aware of the rarity of W. carteri and its specialized habitat needs.	continuous	FWS, FWC, FDEP, private	3	3	3	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	zice-h1.1 [sc-1.1, 6.0]	Secure habitat through acquisition, landowner agreements, and conservation easements for Florida ziziphus (Ziziphus celata).	continuous	FWS, FDEP, NGO, private				Cost dependent upon specific site and amount of land acquired.
2	zice-h1.2.1 [sc-2.1, 3.1]	Conduct prescribed burns.	continuous	FWS, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	zice-h1.2.2 [sc-2.3, 3.2]	Control and eliminate exotic and invasive plants and animals.	continuous	FWS, FDEP, DOF, FWC, WMD, DOT, NGO, private	2/acre	2/acre	2/acre	Total cost dependent upon number of acres infested with exotics.
3	zice-h1.2.3 [sc-1.2, 2.6, 3.2]	Control access to areas where listed plants are growing.	continuous	FWS, DOF				Task currently enforced and cost is included in responsible agency's budget.
2	zice-h2.1 [sc-2.1, 3.1]	Restore natural fire regime.	continuous	FWS, DOF, private	1/acre	1/acre	1/acre	Total cost dependent upon number of acres burned.
3	zice-h3.0 [sc-8.1-8.3]	Conduct habitat-level research projects.	5 years	FWS, DOF, private	20	20	20	
2	zice-h4.0 [sc-8.1-8.3]	Monitor habitat/ecological processes.	continuous	FWS, DOF, NGO, private	7	7	7	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	zice-h5.0 [sc-9.0]	Provide public information about scrub and its unique biota.	continuous	FWS, FDEP, DOF, FWC, NGO, private	10	5	5	
2	zice-s1.1.1	Conduct surveys in Polk and Highlands Counties.	1 year	FWS, private	3			
2	zice-s1.1.2	Continue surveys for Florida ziziphus on protected lands.	continuous	FWS, FNAI, FDEP, DOF, private	1	1	1	Properties should be surveyed when acquired.
2	zice-s1.2	Maintain distribution of known populations and suitable habitat in GIS database.	continuous	FWS, private	2	2	2	
1	zice-s2.1 [sc-1.1, 6.0]	Protect privately-owned habitat through acquisition, conservation easements, or agreements with landowners.	continuous	FWS, NGO, private				Cost dependent upon type of protection provided.
1	zice-s2.2 [sc-1.2, 1.3]	Protect populations of Florida ziziphus on public lands.	continuous	FWS, DOF, private				Cost dependent upon type of protection provided.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	zice-s2.3 [sc-1.0]	Use local or regional planning to protect habitat.	continuous	FWS, counties				Cost included in standard operating procedures of participating agency's budget.
1	zice-s2.4.1	Conserve germ plasm.	continuous	FWS, private	1	1	1	
1	zice-s2.4.2	Maintain ex situ collection.	continuous	FWS, private	2	2	2	
1	zice-s2.5.1 [sc-2.4]	Establish a protocol for reintroduction.	completed					An informal recovery group (Archbold Biological Station, Historic Bok Sanctuary, land managers) is planning reintroductions.
1	zice-s2.5.2 [sc-2.4]	Locate potential (re)introduction sites.	1 year	FWS, DOF, private	3			
1	zice-s2.5.3 [sc-2.4]	(Re)introduce plants to protected sites.	5 years	FWS, private	15	15	15	
2	zice-s2.6.1 [sc-1.3]	Initiate section 7 consultation when applicable.	continuous	All Federal agencies				Cost included in standard operating procedures of Federal agency's budget.

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
3	zice-s2.6.2 [sc-1.3]	Enforce take and trade prohibitions.	continuous	FWS, FDACS/DPI				Cost included in standard operating budgets of participating agencies.
2	zice-s3.1 [sc-7.0]	Continue research to determine biology and demographic information.	5 years	FWS, private, universities	15	15	15	
1	zice-s3.2 [sc-7.0]	Continue research to assess the reproductive potential of Florida ziziphus in the wild.	5 years	FWS, private, universities	25	25	25	
1	zice-s3.3 [sc-7.0]	Continue research to assess management requirements of Florida ziziphus.	5 years	FWS, private	20	20	20	
1	zice-s4.1 [sc-3.4, 8.1-8.3]	Evaluate the effectiveness of the monitoring protocol used to assess population trends for Florida ziziphus.	1 year	FWS, DOF, NGO, private	3			Assessment of monitoring methods simple due to small populations.
2	zice-s4.2 [sc-3.4]	Monitor and detect changes in demographic characteristics.	continuous	FWS, DOF, NGO, private	8	8	8	

Priority	Task Number	Task Description	Task Duration	Participants	Costs ($1,000s) FY 1	FY 2	FY 3	Comments
1	zice-s4.3 [sc-3.4, 8.1]	Monitor the effects of various land management actions on Florida ziziphus.	continuous	FWS, DOF, private	8	8	8	
1	zice-s4.4 [sc- 1.1, 2.0, 3.0]	Continue to work with private landowners.	continuous	FWS, DOF, private	2	2	2	
2	zice-s4.5 [sc-2.4]	Monitor introduced plants.	continuous	FWS, DOF, private	5	5	5	
3	zice-s5.0 [sc-9.0]	Provide public information about Florida ziziphus.	continuous	FWS, FWC, NGO, private	10	5	5	