



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.COM

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September 17, 2003

Tom Finley
AZ Game and Fish Department
3500 S. Lake Mary Rd
Flagstaff, AZ 86001

Peggy Ingham
M Diamond Management Co., LLC
9501 E.A.W. Tillinghast Rd.
Scottsdale, AZ 85262

Dear Tom and Peggy:

This letter is to inform you that your project proposal for project number **03-2-041, Boulder Habitat Restoration Project** has been reviewed by all the appropriate committees and has been fully funded by The Arizona Elk Society and the Rocky Mountain Elk Foundation. The project was approved for the requested amount of Special Big Game License-Tag money, \$29,850.

As the project proponent, it is your responsibility to initiate project implementation and to notify the Game Branch and/or the Development Branch, as appropriate, when you are ready to start your project. If you have questions about how to proceed, please don't hesitate to call me at (602) 789-3349. Please refer to the project number when making any inquiries or when coordinating with the Game Branch on project implementation.

Thank you for your participation in the Special Big Game License-Tag funding program and for your dedication to the management Arizona's magnificent big game species.

Sincerely,

Ruth Gregory
Game Program Administrative Coordinator

West Clear Creek • Page 18 of 22

**ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

PROJECT INFORMATION

Project Title: Boulder Habitat Restoration Project

Project Type: Mechanical Treatment

Project Number: 03-2-041

Project Description:

The Boulder Habitat Restoration Project would seek to mechanically treat approximately 500 total acres in pinyon/juniper woodland in Unit 6A. The proposed project is to mechanically remove invading pinyon/juniper with the use of an Arizona Game and Fish Department contract Agra-Axe. Pretreatment efforts would include mapping the contours of the treatment inside the project area (dictated by the presence of deep productive soils and invading pinyon/juniper or increasing canopy cover in the presence of valuable forage resources). Slash would be dropped in place to provide microclimates to facilitate reestablishment of forage species. Two to three years after initial treatment the permittee would initiate efforts to reduce slash and explore uses for erosion control.

The proposed project would take place on the Buckhorn Allotment in the southern portion of Unit 6A north of West Clear Creek.

Though pinyon/juniper woodlands are considered a climax community in much of the area there is an increasing canopy cover leading to a decrease in under-story diversity and forage value and some invasion of existing interior chaparral/grassland communities. While climax adapted species suffer no shortage of pinyon/juniper woodland habitats many big game species requiring the diversity supplied by disturbance (retrogression) are facing a decrease in habitat quality and diversity.

Wildlife Species to Benefit: Elk 50%, pronghorn 20%, mule deer 30%, would benefit from this project

Implementation Schedule:

Beginning: May 2003

Completed: May 2005

PROJECT FUNDING

SBG Funds Requested: \$ 29,850

Cost Share Funds: \$ 180,350

Total Project Costs: \$ 210,200

Funds Administration:

PARTICIPANT INFORMATION

Co-Applicants:

Tom Finley, Wildlife Manager

Telephone: 928-774-5045

Address:

Arizona Game and Fish Department Region II

3500 S. Lake Mary Road

Flagstaff, Arizona 86001

██████████
████████████████████
██████████
██
████████████████████████████████
██

HPC: Flagstaff	
Coordinated with: AGFD, USFS, ADEQ and [REDACTED]	
Applicant's signature:	Date:

SEND COMPLETED APPLICATIONS TO:

**Ron Day, Game Branch
2221 W. Greenway Rd.
Phoenix, AZ 85023
rday@gf.state.az.us**

NEED STATEMENT/PROBLEM ANALYSIS:

Pinyon/juniper invasion of grassland/interior chaparral communities in much of Arizona has contributed to a decrease in forage production and habitat quality. Climax pinyon/juniper communities often lack the retrogression (for a variety of land management reasons) caused by disturbance that lead to the maintenance of important understory browse plants and the maximization of edge effect and diversity. Big game species such as elk, mule deer and whitetail deer tend to benefit from habitats where vegetation types were numerous and well interspersed creating maximized edge between habitat types. Pronghorn tend to be more selected to a climax grassland community yet utilize pine/oak woodlands and pinyon/juniper woodlands in Unit 6A with great frequency.

Though pinyon/juniper woodlands are considered a climax community in much of the area there is an increasing canopy cover leading to a decrease in under-story diversity and forage value and some invasion of existing interior chaparral/grassland communities. While climax adapted species suffer no shortage of pinyon/juniper woodland habitats many big game species requiring the diversity supplied by disturbance (retrogression) are facing a decrease in habitat quality and diversity.

During the 1960's and 1970's much of the southern portion of Game Management Unit 6A was mechanically manipulated to remove pinyon/juniper. The Buckhorn Allotment area of Game Management Unit 6A was largely excluded from treatment during that time. The portions of the allotment that were included in treatment were recognized in the 1991 Buckhorn Allotment Management Plan (page 3) as producing stands of western wheatgrass and other introduced cool season species. The AMP also calls for the additional treatment (through fuel wood sales) of the Bald Hill, Indian Flat, Painted Tank and Buckhorn Units. Though obviously dated, the Buckhorn Allotment Management Plan provides some history and documentation for the long needed treatment of this allotment.



Photograph 1

Mule deer utilizing pinyon/juniper habitat near the proposed treatment area. Note the young junipers on left closing in the habitat available for browse plants.

In 2002 the Arizona Game and Fish Department was contacted by [REDACTED] (owners of the [REDACTED] Ranch including the Buckhorn Grazing Allotment). The [REDACTED] were initially concerned about elk use and damage on their deeded base property. The [REDACTED] had restocked the allotment in 2002 after an absence of cattle for several years. Since initial contact with the Department the Inghams have strived to manage their base property and allotment through an aggressive Habitat Improvement Initiative that seeks to provide a sustainable existence for people, livestock and wildlife. The initiative has been aggressive and diverse. It has included:

- The repair of 10 earthen tanks during the summer of 2002.
- The fencing of riparian habitat on West Clear Creek to exclude livestock grazing.
- The initiation of a pipeline project to improve water availability for livestock and wildlife.
- The repair of ranch assets including fences and corrals.
- The hauling of water to livestock and wildlife during drought conditions.

(See Budget Analysis)

The severe drought of 2002 led to high mortality of junipers in adjacent areas but seemed to miss important areas of the allotment.

NEED STATEMENT/PROBLEM ANALYSIS:

(Continued)

The Boulder Habitat Restoration Project would seek to mechanically treat approximately 500 total acres in pinyon/juniper woodland in Unit 6A. The proposed project is to mechanically remove pinyon/juniper with the use of an Arizona Game and Fish Department contract Agra-Axe. The treatment effort would be directed toward the creation of numerous contour openings in the pinyon/juniper woodland while attempting to maintain species such as cliffrose, mountain mahogany, skunkbush and oak. Pretreatment efforts would include mapping the contours of the treatment inside the project area (dictated by the presence of deep productive soils and invading pinyon/juniper or increasing canopy cover in the presence of valuable forage resources). Slash would be dropped in place to provide microclimates to facilitate reestablishment of forage species. Two to three years after initial treatment the permittee would initiate efforts to reduce slash and explore uses for erosion control. The proposed project would take place on the Buckhorn Allotment in the southern portion of Unit 6A north of West Clear Creek. This project will not attempt to achieve type conversion. The goal is to retreat some previously treated areas and to cause limited retrogression in a climax pinyon/juniper community to optimize habitat value for livestock and wildlife.

PROJECT OBJECTIVES:

The primary objective of the proposed project is to improve forage quality and habitat conditions by removing blocks of dense and/or invading pinyon and juniper trees from grassland/interior chaparral areas in the vicinity Boulder Pasture. Removal of invading pinyon/juniper would be accomplished mechanically with the use of the Arizona Game and Fish Department's Contract Agra-Axe. The project would be accomplished while maximizing edge effect and maintaining escape cover for wildlife. This project would include efforts to utilize fallen slash as a tool to form a temporary microclimate for forage development. Portions of the slash material may also be used by permittees to control erosion. Adjacent areas could be proposed for treatment in future grant proposals to maximize the habitat benefit in the Boulder Tank area.



Photograph 2
Juniper invasion of browse plants (cliffrose) in Boulder Unit of the Buckhorn Allotment.

PROJECT STRATEGIES:

Project strategies will/may include:

- The delineation of contoured treatment areas to maximize edge effect and habitat value
- The mechanical removal of approximately 500 acres of pinyon/juniper (emphasis on juniper) utilizing a mini loader supported tree shear.
- The temporary accumulation of tree carcasses to provide protected microclimates for the establishment of seed beds.
- The eventual hand stacking of some slash to facilitate future burning and reduce erosion in strategic locations in the Bald Hill and Boulder Pastures of the Buckhorn Allotment
- The future slash pile burning to reduce the barrier impact and visible structure incurred as tree carcasses accumulate

PROJECT LOCATION:

The proposed project site is located in Coconino County in the Coconino National Forest. The Project site is on the Boulder Pasture (1002 acres) and Bald Hill Pasture (2,944 acres) of the Buckhorn Allotment.

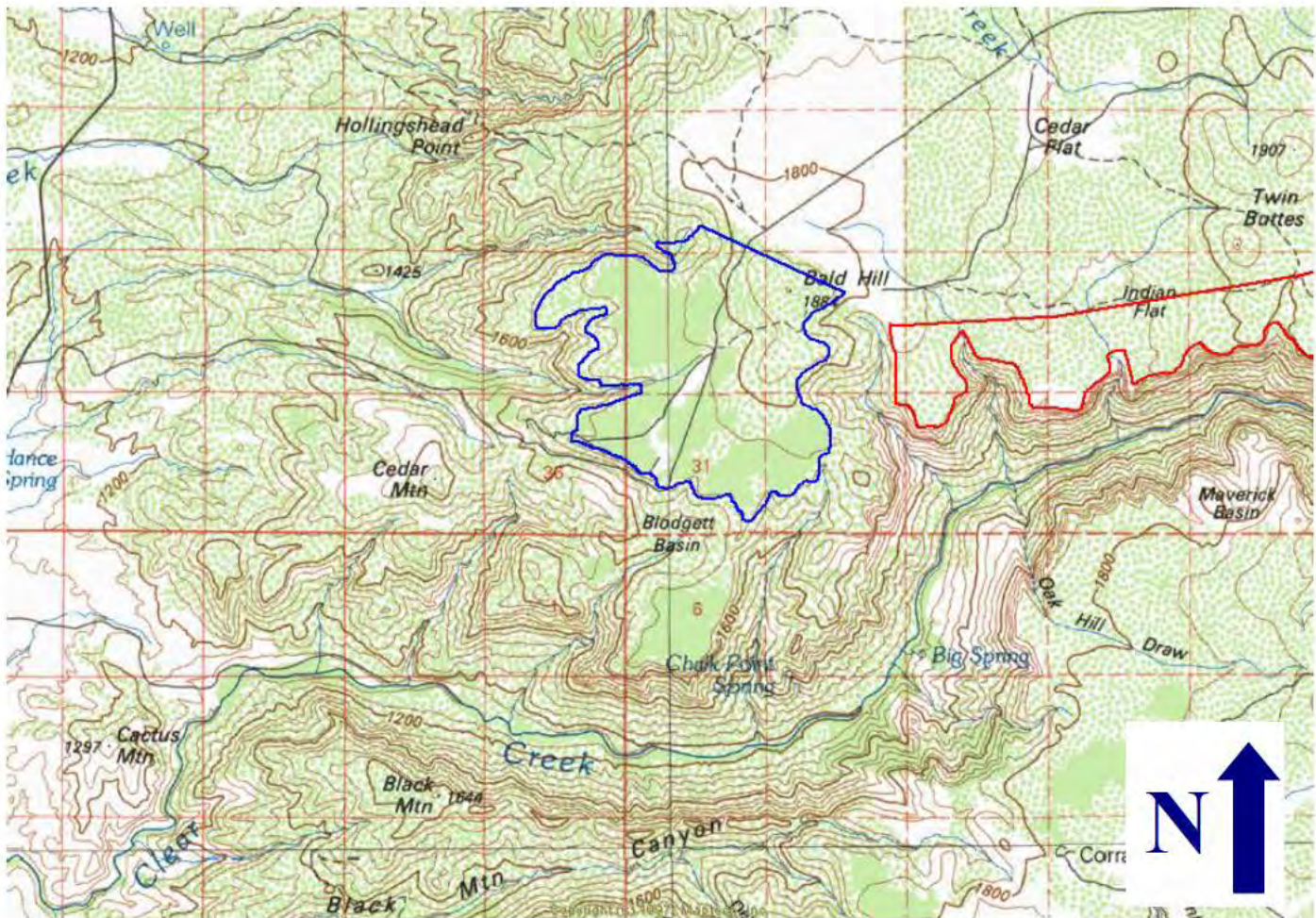
T. 14 N., R. 6 E., Sec. 25,36

T. 14 N., R. 7 E., Sec. 29,30,31,32

T. 13 N., R. 7 E., Sec. 6

Area landmarks include Buckhorn Mountain, Bald Hill and Blodgett Basin. The project area is in the transition between Cedar Flat and West Clear Creek Canyon.

Exact project location will be determined in a collaborative effort between AGFD, USFS and M Diamond Ranch.



BOULDER HABITAT IMPROVEMENT PROJECT MAP

The area outlined in blue is the approximate outside boundary of the project site. Treatment areas would be selected inside this boundary based on soil mapping and cooperator participation.



Photograph 3

Photograph of Buckhorn Allotment looking east toward Buckhorn Mountain (Photograph taken from Bald Hill). Proposed treatment areas would be located in more densely treed areas on right. Portions of the proposed project site are out of view to right.

HABITAT DESCRIPTION:

The Buckhorn allotment is located in the southern portion of Game Management Unit 6A. The allotment is situated along the length of the canyon formed by the West Clear Creek. The area is well known to Arizona sportsmen because the diverse habitat provides cover and forage to an abundance of big game species. The allotment contains some of the best riparian habitat in Arizona. Because of geography, elevation, etc. the allotment also happens to be situated in the intersection of Pine/Oak woodland, Grassland desert-scrub, pinyon /juniper woodland, interior chaparral and Sonoran desert scrub communities. Elevations range from approximately 6600 feet above sea level at Buckhorn Mountain to approximately 3800 feet above sea level in the bottom of West Clear Creek Canyon.

The Boulder and Bald Hill Pastures of the allotment are situated middle of the allotment. The proposed treatment would be directed toward the retrogression of dense stands of climax pinyon/juniper and or pinyon/juniper invasion of grassland/desertscrub and interior chaparral habitats.

ITEMIZED USE OF FUNDS:

See Budget Analysis

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

Arizona Game and Fish Department:

Provide contract Agra-Axe and operator and related expenses.

Provide technical support during project to ensure maximum edge effect and cover for wildlife.

Provide field support when needed during the project.

[REDACTED]

Obtain appropriate USFS permits and clearances.

Provide labor during pretreatment (marking areas to be treated and mapping).

Provide labor and support during Agra-Axe work portion of project.

Provide planning and labor to complete eventual project area burn.

PROJECT MONITORING PLAN:

The treatment areas would be included in future wildlife survey efforts by wildlife managers.

The treatment area would be photographed extensively before treatment and after treatment. Future photographs would be available for viewing on the M Diamond Web Site as an information/education outreach and a monitoring opportunity.

PROJECT MAINTENANCE:

Not Applicable

PROJECT COMPLETION REPORT TO BE FILED BY:

The Completion Report will be filed by Co-applicants:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Tom Finley
Wildlife Manager
Arizona Game and Fish Department
3500 S. Lake Mary Road
Flagstaff, Arizona 86001

TREE SHEARING (AGRA-AXE) PROJECTS

The Boulder project costs were calculated using a mean stem density of 61-80 trees/acre which places it in the rate of \$59.70/acre based upon current state contract pricing.

BUDGET ANALYSIS BOULDER HABITAT IMPROVEMENT PROJECT

ANTICIPATED COSTS:

PROJECT COMPONENT and COOPERATOR

COST-SHARE DOLLARS	GRANT DOLLARS REQUESTED
	\$ 29,850

ARIZONA GAME AND FISH DEPARTMENT/HPC FUNDING

- Provide contract Agra-ax and labor to remove approximately 500 acres of pinyon/juniper from the Boulder and Bald Hill Units. Funds calculated at AGFD contract price (based on 61-80 trees/acre) 500 acres @\$59.70/acre

ARIZONA GAME AND FISH DEPARTMENT STEWARDSHIP PROGRAM

- Provide materials and labor to protect 3.6 miles of riparian habitat along West Clear Creek (calculated at \$8,694.45/mile for 3.6 miles) \$ 31,300.

ARIZONA GAME AND FISH DEPARTMENT REGION II

- Provide wildlife manager support for grant preparation, project planning and execution. Calculated as 5 days @ \$150/day \$ 750.

M DIAMOND MANAGEMENT COMPANY L.L.C.

- Provide labor and support to select and mark Boulder Project treatment areas with AGFD and USFS assistance. \$ 2,000.
- Provide labor and funding to clean ten earthen stock tanks on Buckhorn Allotment. \$ 12,300
- Provide labor and support to reduce slash litter when appropriate through erosion control, piling and potentially burning as regulations allow. \$ 4,000.
- Install Wickiup Well and Generator. Calculated by contractor bid for well construction and generator installation. \$ 100.
- Install Wickiup Pipeline and Storage. Calculated by contract pricing to install 9 miles of pipeline and (3) 10,000-gallon water storage tanks. \$ 500.
- Provide labor and support for project oversight and administration including grant application completion (ADEQ and AGFD Stewardship), Bid acquisition, Forest Clearances etc. \$ 5,000.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

- Install Wickiup Well and Generator. Calculated by contractor bid for well construction and generator installation. \$ 20,500.
- Install Wickiup Pipeline and Storage. Calculated by contract pricing to install 9 miles of pipeline and (3) 10,000-gallon water storage tanks. \$ 62,500.

(Continued)

\$ 450.

USDA- COCONINO NATIONAL FOREST

- Provide labor to complete NEPA and Archeological Clearances for West Clear Creek Fencing. Calculated as 3 days @ \$150/day. \$ 3,000.
- Provide labor to complete NEPA and Archeological Clearances for Wickiup Well/Pipeline Project on Buckhorn Allotment. Calculated as 20 days @ \$150/day. \$ 22,500.
- Provide funding for structural improvements and revegetation effort in Wickiup Well/Pipeline Project on Buckhorn Allotment. \$ 15,000.
- Provide labor to complete NEPA and Archeological Clearances for Boulder Habitat Improvement Projects. Calculated at 500 acres at \$30/acre \$ 450.
- Provide labor to assist permittee in selecting and marking treatment areas. Calculated at 3 days @ \$150/day

TOTALS: **\$180,350** **\$ 29,850**

PROJECT TOTAL: \$210,200.

COST-SHARE DOLLARS/GRANT DOLLAR: \$6.04

NOTE: The ADEQ funding and the AGFD Stewardship funding has already been approved for this project. The clearance work for the pipeline and fencing is approved and underway.

Attachments:

1. (Page 11) [REDACTED] Conservation Initiative
2. (Page 12) ADEQ Grant Award Letter
3. (Page 13) AGFD Stewardship Grant Award Letter
4. (Page 14,15) USFS - Coconino National Forest Support Letter

Attachment 1

Habitat Improvement Initiative

The primary goal of the [REDACTED] as operated by the [REDACTED] [REDACTED] is to provide a sustainable existence for all who live on the ranch (people, livestock and wildlife). Recognizing that the quality of life for all is dependent on the quality of the habitat, ongoing actions are necessary to attempt to improve the habitat, primarily by increasing forage and water.

In Sept. 2000, cattle were returned to the Buckhorn Grazing Allotment by the [REDACTED]. They are intensively managed, requiring frequent moves between small pastures based on careful monitoring of the available water and forage. Because cattle had been absent for a number of years, the repair of numerous range improvements was necessary, including repairing many miles of fence and completely rebuilding one major stock tank. These expenses were borne totally by [REDACTED].

In 2001, fence rebuilding continued, and corrals at Painted Tank Pasture were rebuilt, again financed by [REDACTED] management. It was necessary to haul water to livestock and wildlife on the winter range, an expense borne completely by [REDACTED].

During the summer of 2002, 10 dirt tanks were cleaned at the expense of [REDACTED]. In Aug. of 2002, a multi-agency project was initiated by [REDACTED] to protect the riparian areas of West Clear Creek from livestock grazing and develop an alternative water source in the winter range. Work on this project began in Jan 2003 with funding from Arizona Department of Environmental Quality (Water Quality Improvement Fund), Arizona Game and Fish (Stewardship Program), the US Forest Service, and [REDACTED].

In Feb 2003, [REDACTED] and Arizona Game and Fish developed several proposals to improve habitat on the range. The first was to improve grasslands in the Indian Flat Boulder and Bald Hill Pastures by applying agri-axe treatment to remove invading junipers. In addition to use by livestock, there are both white-tail and mule deer, abundant elk and a resident herd of approximately 35 pronghorn antelope in that portion of the allotment.

Attachment 2



2/26/03

12:52 PM

1/1



Jane Dee Hull
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us



Richard W. Tutin II
Acting Director

December 18, 2002



Re: [REDACTED] West Clear Creek Project, ADEQ Project #5-012

Dear [REDACTED]:

It is my pleasure to inform you that you have been awarded a Water Quality Improvement Grant for your [REDACTED] West Clear Creek Project. Congratulations!

An introduction letter from [REDACTED] Grant Coordinator for the Water Quality Improvement Grant Program, is enclosed. [REDACTED] will be contacting you to set up a start-up meeting, but feel free to contact her if you have any immediate concerns. Please read the attached letter carefully as it includes guidelines for beginning your project and complying with the administrative requirements of your grant.

If you have any questions regarding the grant process, please contact [REDACTED] Water Quality Improvement Grant Manager, at [REDACTED] or toll free in Arizona at [REDACTED].

Congratulations again on your Water Quality Improvement Grant. We appreciate your participation in our grant program and encourage you to work with the Arizona Department of Environmental Quality personnel for future proposals.

Sincerely,



Enclosure: Introduction letter from [REDACTED]

cc: [REDACTED] ADEQ Hydrologic Support and Assessment Section Manager
[REDACTED] ADEQ Water Quality Improvement Grant Manager

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

Printed on recycled paper

Attachment 3



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • WWW.AZGFD.COM

GOVERNOR
JANE DEE HULL
COMMISSIONERS
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W. HAYS GILSTRAP, PHOENIX
JOE MELTON, YUMA
DIRECTOR
DUANE L. SHROJEE
DEPUTY DIRECTOR
STEVE K. FERRILL



Appendix C

September 5, 2002



Dear [REDACTED]

I have reviewed the Buckhorn Allotment Restoration Project and the Stewardship Program is prepared to provide assistance by completing the 3.6 miles of fence intended to protect the riparian habitat along Clear Creek. The cost of materials and labor to complete this project element is estimated at \$31,300. The funding source for this commitment is the Heritage Fund which utilizes proceeds from the state lottery.

Please let me know of progress to obtain the required clearance from the U.S. Forest Service so that I can schedule the work the Department's fence contractor.

If you have any questions, feel free to contact me at 602-789-3503.

Sincerely,

David Belitsky
David Belitsky
Stewardship Program Coordinator

DB:db

Cc: John Goodwin, Tom Finley



West Clear Creek Proposal

Page 20 of 21

Attachment 4

From: Laurance A. Ingram To: Tom Finley

Date: 2/26/2003 Time: 6:04:52 PM

Page 1 of 1

02/26/03 WEB 14:28 FAX 1 520 203 7539

SEDONA RANGER DIST

2/06



United States
Department of
Agriculture

Forest
Service

Red Rock
Ranger District

P.O. Box 506
Sedona, AZ 86339-0506
Phone: (928) 282-4119
Fax: (928) 293-7539

File Code: 2630-1 Improvements
Date: February 26, 2003



We are in support of your two 500-acre proposals--Indian and Boulder Wildlife Habitat Restoration projects located on the Buckhorn Allotment. These two projects involve mechanically thinning dense stands of pinyon-juniper woodlands along the north rim of West Clear Creek, within the Boulder, Bald Hill, Indian Flat and Painted Tank Features of the allotment. I commend the [REDACTED] for your initiative to seek outside funding for wildlife and rangeland improvements.

We agree that the first step is to map the areas for the deeper soils. We agree with the proposed Agra-Axe treatment to create small clearings or openings in the areas of deeper soils and canopy-thinning and reduction treatments in the shallower soils. These treatments must incorporate wildlife habitat cover and edge-effect values as well as full protection of cultural resource values. Finally, we agree that the slash generated should be dropped in place.

However, the proposed slash treatment 2 or 3 years after initial treatment is not approved. Burning of the slash is not always the right treatment. Besides, if we choose to burn, we would want to do it when the red needles are still on the slash. We are, however, agreeable to monitor the situation and to determine, based on actual slash concentrations, whether we have any specific issues related burning or wildlife or livestock movement.

In support of your proposal, we would like to offer the following tasks and estimated costs:

SUPPORT TASK	ESTIMATED COSTS
1. Soil Mapping	\$ 1,000.00
2. Field Mapping and Layout of Clearing and Thinning Treatments	\$1,250.00
3. Biological Clearance, and	\$ 500.00
4. NEPA Compliance, Categorical Exclusion (FSM 1909.15, 31.2 - 6)	\$250.00
TOTAL	\$2,000.00



Caring for the Land and Serving People

Department of Agriculture



Attachment 4 (Continued)

From: Laurence A. Ingham To: Tom Finley

Date: 2/26/2003 Time: 8:11:26 PM

Page 1 of 1

02/26/03 WED 14:28 FAX 1 520 263 7539

SEDONA RANGER DIST,

0003

[REDACTED] Agra-Axe Heritage Grant

2/26/2003

Unfortunately, due to the nature of the project, limited budgets, and management priorities, we are unable to commit to a greater level of support at this time. Perhaps additional supporting grants are available from other wildlife organizations.

Sincerely,

[REDACTED]

District Ranger

cc: [REDACTED] - District Biologist, [REDACTED] - District Hydrologist, [REDACTED]
[REDACTED] - Forest Stewardship Staff Officer