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## Lake Mead National Recreation Area Monitoring and Evaluation of Sensitive Wildlife: Quarterly Progress Report, Period Ending June 30, 2007

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## **QUARTERLY PROGRESS REPORT**

University of Nevada, Las Vegas  
Period Ending June 30, 2007

Cooperative Agreement Number: H8R07060001  
Task Agreement Number: J8R07060012

Monitoring and Evaluation of Sensitive Wildlife at  
Lake Mead National Recreation Area

### **Executive Summary**

#### Project 1. Relict Leopard Frog Monitoring, Management, and Research

- Nocturnal surveys completed at all natural and translocation sites – the most striking finding was the lack of frogs observed at Rogers Springs and lower Blue Point despite repeated survey efforts.
- Relict leopard frog annual translocation effort completed – a total of 1957 tadpoles and juvenile frogs released at six translocation sites.
- Potential translocation sites within Gold Butte assessed during site visits in late March.
- Coordination and assistance provided to UNLV research efforts on habitat improvements at Blue Point and Rogers Springs, and with proposed FWS actions to construct a tadpole rearing facility and artificial habitat at the Willow Beach National Fish Hatchery.
- Relict Leopard Frog Conservation Team meeting held.

#### Project 2. Bald Eagle Winter Monitoring and Evaluation

- No action required this quarter.

#### Project 3. Peregrine Falcon Monitoring and Evaluation

- Peregrine falcon spring monitoring activities ongoing – all known territories visited at least once for a total of 27 passive surveys. An additional 11 passive surveys conducted in undocumented areas; 44 active surveys conducted at known peregrine falcon sites.
- Two new territories identified in Black Canyon and at the Overton Arm in addition to the territory documented on southern Lake Mohave the previous quarter. Successful breeding documented at the Overton Arm site and late-stage nestling observed at the southern Lake Mohave site.

#### Project 4. Assessment of Six Covered and Three Evaluation Bird Species

- Pilot study initiated to evaluate point-count survey methods.
- 16 point-count surveys performed this quarter using methods compatible with Great Basin Bird Observatory (GBBO) protocol.
- 18 call-broadcast surveys for the thrasher species performed. Field effort for regional assessment of thrasher distribution and habitat selection completed this quarter. Emphasis is now being placed on assessment, analysis, and modeling of these data.
- Annual surveys for Southwestern Willow Flycatchers ongoing – four surveys conducted at two sites on Lake Mohave.

#### Project 5. Desert Tortoise Monitoring and Management

- Tortoise monitoring assistance planned for a NPS burn site.
- Compliance activity ongoing.

#### Project 6. Shorebird Monitoring on Lakes Mead and Mohave

- A total of 27 monthly surveys were conducted on monitored sites on Lakes Mead and Mojave as well as incidental surveys.
- Breeding population of snowy plovers discovered on Lake Mead - counts revealed 37 adult birds breeding at the confluence of the Muddy River and an additional 10 birds on Sand Island. Chicks observed at both sites. This is the first documented case of snowy plovers breeding on Lake Mead and represents a breeding range expansion of greater than 30 miles. Snowy plovers are listed as a Nevada Species of Concern and the Pacific Coast population is federally listed as threatened.

#### Project 7. Desert Bighorn Sheep Habitat Use Monitoring in Relation to Highway Development.

- Data management of GPS collar information from bighorn sheep ongoing.

#### Other Activities

- Part-time research assistant hired to assist with point-count surveys and assessment this spring.

### **Program Activities**

The task agreement was awarded to the University of Nevada, Las Vegas (UNLV) on October 1, 2006. Research, monitoring, and management activities are conducted primarily by UNLV Public Lands Institute (PLI) employees. During the quarter ending June 30, 2007 the following activities have occurred toward meeting deliverables in the statement of work. Note that the wording for the deliverable statements below (*italicized font*) has been abbreviated from that within the task agreement.

#### Hiring and Student Opportunities

Mr. CJ Calvo (undergraduate assistant) and Mr. Dane Gerace (undergraduate intern) continued to assist part-time with wildlife research and monitoring efforts during this quarter. Ms. Dorothy Crowe, a professional bird expert who worked part-time on this task agreement last spring, was hired again this quarter (through July) to assist part-time with upland bird surveys and assessments.

#### Project 1. Relict Leopard Frog Monitoring, Management and Research

##### *Phases I and II*

*1. Experimental translocation program for the Relict Leopard Frogs* – Late stage tadpoles and post-metamorphic frogs reared at U.S. Fish and Wildlife Service (USFWS) Willow Beach National Fish Hatchery and at the Lake Mead National Recreation Area (Lake Mead NRA) head-start facility were released at existing translocation sites (Table 1). No translocations were conducted at Sugarloaf Spring because it has been removed from the translocation program due to a lack of persistent water.

**Table 1.** Tadpole and post-metamorphic frog release data for Relict Leopard Frog translocation program during 2007.

Date	Translocation Site	Tadpoles Released (n)	Frogs Released (n)	Total
4/19/07	Goldstrike Canyon	250	0	250
4/25/07	Grapevine, AZ	820	0	820
4/22/07	Lower Grapevine Spr, NV	295	250	545
4/25/07	Tassi Spring	0	226	226
5/5/07	Pupfish Spring	0	38	38
5/16/07	Red Rock Spring	0	78	78

Quagga mussels had been found in the external raceways at the Willow Beach National Fish Hatchery this spring, which raised concerns over potential contamination of the tadpole rearing area there. The raceways in which the tadpoles are reared are filled with isolated well water that is sand and UV filtered and located in a quarantine area, which has no contact or shared equipment with the outdoor raceways. All equipment used at this site was isolated from use at other sites or facilities. Dechlorinated water from the Lake Mead NRA head-start facility was used to transport frogs and tadpoles reared at the Willow Beach facility to decrease potential of quagga mussel transmission during translocations. Ms. Drake is collaborating with biologists at Nevada Department of Wildlife on protocols which will further ensure reduction of possibilities of transportation of quagga mussels

Ms. Drake met with the new Willow Beach National Fish Hatchery manager, the assistant manager, and representatives from the Clark County Multiple Species Habitat Conservation Plan (MSHCP) on June 6, 2007 to discuss the plans for the new tadpole rearing facility and artificial habitat construction at the hatchery. This project was approved for funding two years ago, when there was a different hatchery manager and cost estimates.

*2. Potential sites for translocations* – Following discussions at the Relict Leopard Frog Conservation Team meeting in November, Dr. Jef Jaeger, Ms. Drake and Mr. Marc Maynard (BLM biologist) conducted reconnaissance visits to 13 potential springs within the Gold Butte area on March 27 and 28, 2007. Many of the spring sites were unsuitable habitat for translocation of the Relict Leopard Frog. Two sites will likely be pursued as potential translocation sites for the coming year; both will require some habitat modification prior to translocation and assessments of summer water levels.

*3. Monitoring surveys of all translocation sites will be conducted at least twice per year* – During this quarter, nocturnal visual encounter surveys (VES) were conducted at all but one of the existing experimental site (six sites total); the exception was Sugarloaf Spring which has been removed from the list of active translocation sites due to lack of standing water during last summer and a failure to observe frogs in autumn. Adult Relict Leopard Frogs were seen at all six sites—juveniles were observed at two sites, and larvae (tadpoles) at four sites.

*4. Monitoring surveys of all natural sites will be conducted at least twice per year* – During this quarter, nocturnal VES were conducted at all natural Relict Leopard Frog sites and at one previously inaccessible site and its side channel (eight sites total). Adult Relict Leopard Frogs were observed at seven of the eight sites, with juveniles seen at four sites and larvae (tadpoles) at two of the eight sites. No Relict Leopard Frogs were seen at Rogers Spring or lower Blue Point Spring, despite repeated surveys of these sites this quarter (three visits each).

5. *Small-scale habitat management* – No small-scale habitat management was conducted during this quarter (but see assistance with fish-free pond construction, #8, below).

6. *Exotic vegetation control activities by collaborators* – No activities were conducted this quarter.

7. *Coordinate semi-annual meetings of the Relict Leopard Frog Conservation Team (RLFCT) and ensure the development of RLFCT annual work plans and annual reports* – A meeting of the RLFCT was held on April 18, 2007 at Lake Mead NRA Headquarters. Members in attendance associated with this task agreement included Dr. Jaeger, Ms. Drake, and Mr. Haley. Ms. Drake assisted Mr. Haley with the organization of this meeting as well as working with RLFCT members to complete and finalize the 2006 final report. Ms. Drake has completed the meeting minutes to be shared with the RLFCT for review.

8. *Assist with scheduled habitat research projects at Blue Point and Rogers Springs* – Dr. Jaeger coordinated efforts by UNLV employees, including PLI vegetation staff and Ms. Drake in collecting vegetation monitoring data on previously conducted manipulation experiments at Blue Point and Rogers Springs. Under a separate project, Dr. Jaeger also conducted site reconnaissance with Mr. Curt Deuser (manager of the NPS Exotic Plant Management Team) and Mr. Cobie Cavanaugh (NPS Assistant Fire Management Officer) on June 6, 2007 to discuss experimental vegetation management for Relict Leopard Frogs via burning at Rogers and Blue Point Springs. A burn plan is being developed at Rogers Spring for NPS consideration. Dr. Jaeger also coordinated UNLV employees on June 14, 2007 in the construction of a small fish-free pond (4 m x 2 m x 20 cm deep) at upper Blue Point Spring.

#### *Phase I*

1. *Mark-recapture study of the frog population at Rogers Spring* – Starting again in April 2007, after nocturnal temperatures were conducive to successful frog surveys, three surveys were conducted in an attempt to estimate the number of adult frogs at Rogers Spring. No frogs were seen at this site during these surveys.

As part of a separate habitat experiment project, three surveys to mark-recapture frogs at lower Blue Point Spring have also failed to find frogs. Weekly mark-recapture surveys at upper Blue Point have been used to estimate the population at only 10 adult frogs, not including 3 juveniles observed (but not marked) at this site.

### Project 2. Bald Eagle Winter Monitoring and Evaluation

#### *Phase I*

1. *Protocols and a written manual will be developed to improve quality control of data collected* – This deliverable was previously completed.

2. *An annual report will be prepared by September 30, 2007* – A draft document was submitted to Mr. Haley on 2-16-2007 and is currently undergoing review.

## *Phase I and II*

*1. Yearly winter counts of bald eagles on Lakes Mead and Mojave coordinated and conducted –* Counts are conducted in January, and preparations for the 2008 count will begin during the last quarter of 2007.

### Project 3. Peregrine Falcon Monitoring and Evaluation

#### *Phase I.*

*1. Yearly monitoring activities –* Ongoing spring monitoring activities have been conducted this quarter. All known territories within Lake Mead NRA have been visited at least once for a total of 27 passive surveys. Additionally, 11 passive surveys have been conducted in previously undocumented areas. These efforts have resulted in the identification of 10 peregrine falcon eyries (nesting ledge) and a single prairie falcon eyrie by June 18, 2007. Two additional peregrine territories (in Black Canyon and the Overton Arm) have been identified in addition to the site documented on southern Lake Mohave the previous quarter. Successful breeding was documented at the Overton Arm site after observation of one fledging peregrine in early June. The site on southern Lake Mohave currently has three late-stage nestlings. It has been difficult to determine breeding status at the new site in Black Canyon, but it is occupied by an adult pair and has likely had breeding activity this year.

*2. Evaluation of survey protocols –* Active surveys have been conducted on both lakes in May and June. As in past years, the active surveys target most sites that are accessible by water and utilize methods to actively elicit a response by resident peregrine falcons to facilitate observations. Through the end of this quarter, 44 surveys have been conducted at known peregrine falcon sites. When completed, results using the active survey protocol will be evaluated against the passive method to determine the efficacy of the competing methods.

#### *Phase II.*

*1. Conceptual model and predictive GIS-based habitat map –* Mr. Joe Barnes (PLI Wildlife Research Assistant) continued a literature search and review of peregrine falcon natural history, behavior, breeding success, and habitat use to develop a conceptual model and predictive habitat model (these deliverables are due during the second year of this task agreement). During the course of this quarter, five additional peer reviewed journal articles were reviewed. The ongoing literature review is reflected in the development of an electronic database of literature on the subject, as well as a database containing a summary of all sources for future reference.

Mr. Barnes has continued coordination with Mr. Mark Sappington (NPS, Lake Mead NRA, GIS Specialist) and Ms. Stacey Provencal (UNLV Harry Reid Center, data management staff) on preliminary efforts to develop a predictive GIS-based habitat map for peregrines within Lake Mead NRA. Ms. Provencal developed a preliminary model used to target some passive exploratory surveys conducted during the past quarter. The coordinates for the 10 eyries found thus far this year have been supplied to Ms. Provencal in order to help develop the predictive habitat map.

## Project 4. Assessment of Six Covered and Three Evaluation Bird Species

### *Phase I and II*

*1. Annual point count surveys as part of regional bird survey efforts* – This quarter PLI personnel conducted a pilot study to assess survey methods for establishing a landbird monitoring program for Lake Mead NRA. For the 2007 field season, point-count surveys were conducted by a pair of trained bird observers working in concert and included various techniques that allowed for determination of detection probability. These methods included distance sampling, removal, and double observer approaches. Data collected on these surveys are compatible with the Great Basin Bird Observatory (GBBO) protocol and will be incorporated into the statewide database. Following these protocols, 16 point-count surveys were performed this quarter in established areas within and adjacent to Lake Mead NRA. These surveys were targeted to specific habitat types that included mesquite, catclaw, tamarisk, cottonwood, and willow. Surveys targeted the MSHCP covered species: Summer Tanager, Phainopepla, Blue Grosbeak, Arizona Bell's Vireo, and Vermillion Flycatcher.

*2. Annual surveys for southwestern willow flycatchers* – Four call-broadcast surveys were conducted at two sites on Lake Mohave, using a standardized survey protocol (as established by the U.S. Geological Survey, Colorado Plateau Research Station). A survey at Waterwheel Cove on 5/24/07 yielded two singing adult willow flycatchers, while a survey at the same site on 6/8/07 detected 1 pair of willow flycatchers and three singing territorial males. The initial survey on at Rockefeller Cove detected one singing willow flycatcher on 5/24/07; this individual was likely a migrating bird and was not detected in the subsequent visit on 6/18/07. One additional survey is required at each during the first half of July. Any detection of willow flycatchers during the July surveys will necessitate additional fieldwork to determine breeding status.

*3. Research to develop habitat assessments and predictive models for cryptic thrasher species* – This quarter Ms. Dawn Fletcher (PLI personnel) working with Mr. Joe Hutcheson (GIS staff at Lake Mead NRA) have begun the process of migrating GIS data into a form usable in statistical programs. To date, the environmental variables that have been extracted and added into a table to be used in a logistic regression analysis are: elevation, landform, and land cover. Next quarter the remaining habitat variables will be extracted including: (1) distance to nearest developed area; (2) distance to nearest road (if possible, roads might be categorized); (3) distance to nearest wash; (4) vegetation (derived from soil layer), (5) soil, and possibly soil properties; and (6) precipitation annual totals and periods of biological significance. Once within a usable framework, these data will be explored for use in statistical analyses. PLI personnel have been in contact with Dr. Cheryl Vanier (biostatistician) to discuss her upcoming availability to assist with the analyses on this project. Within the next few months PLI personnel will begin working with Dr. Vanier to analyze the data within a logistic regression analysis approach.

As in the past quarter, a major focus this quarter, was in determining a method to represent various characteristics of a soil database to be used in creation of the habitat model and organizing the data for statistical assessment. This quarter PLI personnel once again met with soil scientist, Mr. Doug Merkler, in an effort to gain working knowledge of the regional soil database that he helped develop. Throughout the upcoming months PLI personnel, as well as the Lake Mead NRA GIS team, will be working closely with Mr. Merkler in order to derive and extract the soil and vegetation characteristics from the database.

### *Phase I.*

*1. Description of conceptual models for the targeted thrasher species* – The conceptual models for the targeted thrasher species were previously completed.

*2. Completion of a randomized sampling design for countywide thrasher surveys* – A randomized sampling design for countywide thrasher surveys were previously completed.

*3. Conducted field efforts using call broadcast surveys for targeted thrashers* – PLI personnel have been performing call-broadcast surveys since early 2005. This quarter 18 call-broadcast surveys for the thrasher species were performed, with 4 of these repeat surveys at points where thrashers were previously documented. Initial data collection for regional assessment of thrasher distribution and habitat selection was completed this quarter and emphasis is now being placed on assessment and analysis of these data.

*4. Vegetation assessment protocols will be developed and surveys initiated* – During research meetings last quarter, a consensus was reached to assess the basic vegetation observations previously collected at each site during surveys for use in the logistic regressions. All vegetation data has been recently entered into the vegetation database and will be quality assured and checked in the upcoming quarter in order to begin statistical analyses. Further site specific work may be attempted at a later date if determined necessary by the preliminary analyses are completed.

## Project 5. Desert Tortoise Monitoring and Management

### *Phase I & II.*

*1. Coordinate with FWS to determine population survey methodologies, conduct population monitoring surveys, and report* – This project has not been initiated. In consultation with Mr. Haley, it has been decided that no tortoise population surveys will be conducted this year. MSHCP funding for this effort has not yet been secured by the NPS. At the request of the NPS, technical field assistance was provided by PLI research assistants who devoted several days this quarter to assisting Lake Mead NRA fire crews in monitoring a burn for tortoises.

### *Phase I*

*2. Compliance monitoring* – This section summarizes biological monitoring and mitigation activities (compliance monitoring) conducted by PLI staff for desert tortoise and desert tortoise habitats associated with various construction and right-of-way activities within Lake Mead NRA. As a side note, the main PLI compliance person (Dona LeNoue) has been taking annual leave during this quarter as preparation for her scheduled transfer to the NPS in September. Information presented herein is compiled for March 2007 through May 2007 (information for March was not reported on the previous quarterly report and information for June will be compiled for the next quarter).

**Desert Tortoise and Habitat Mitigation and Monitoring of Construction Projects:** In March, 17 days were spent on monitoring the Northshore Road reconstruction project, including four days overseeing barrier boulder placements and five days overseeing topsoil replacement, slope contouring, and topsoil crusting. In April, 12 days were spent on the Northshore Road project,

including four days overseeing topsoil replacement, slope contouring, and topsoil crusting. The Northshore Road reconstruction project ended in April.

Other projects that were active during this quarter included: (1) dredging at Callville Bay and at South Cove; (2) stabilization of deteriorating concrete dikes along Las Vegas Wash, which were built in 2002 to control silt deposits into the lake; and the (3) Southern Nevada Water Authority intake pipe test-drilling project. Monitoring activities on these projects included two days in March, and 2 days in April, at Callville Bay, and 2 days in May at South Cove. Some of these days were spent monitoring for any impact on water resources – impacts were minimal and within NPS policy guidelines. Three days in May were spent on the Las Vegas Wash project including meetings and three site visits. A total of four days (two days in March and two days in April) were spent on the Southern Nevada Water Authority project, which ended this quarter.

**Desert Tortoise Training Provided to Contractors:** Three tortoise education classes were provided to eight contractors during March through May. The Northshore Road project required one class in March, and in May, two classes were held for six workers on the South Cove project.

#### Project 6. Shorebird Monitoring on Lakes Mead and Mohave

##### *Phase I and II*

*1. Monthly inventory and monitoring surveys* – Ongoing monthly surveys were conducted on seven intensively monitored sites on Lakes Mead and Mohave throughout the quarter with a total of 27 surveys completed (Table 2). These surveys included four incidental surveys on Lake Mead and one incidental survey on Lake Mohave; these surveys reflect observations of large assemblages of rafting aquatic birds during spring migration. All data collected during these surveys were entered into the Lake Mead NRA Aquatic Bird Count Database and have been shared with the GBBO.

**Table 2.** Survey sites and numbers of surveys conducted for shorebirds within Lake Mead NRA since March 2004.

Site	Number of Surveys	
	Mar. 04 – Mar. 07	Apr. 07 – Jun. 07
<b>Lake Mead</b>		
• Las Vegas Bay	41	3
• Muddy River	36	3
• Virgin River	36	3
• Grand Wash	23	3
• Bonelli Bay	10	1
• Misc. sites	5	4
<b>Lake Mohave</b>		
• Arizona Bay	36	3
• Nevada Bay	36	3
• Willow Beach	32	3
• Misc. sites	14	1
<b>Total</b>	<b>278</b>	<b>27</b>

A regularly scheduled survey at the Muddy River shorebird site resulted in the discovery of a breeding population of snowy plovers. Counts revealed at least 37 adults. This is the first documented case of snowy plovers breeding on Lake Mead and represents a large range expansion (greater than 300 miles) from their previously known breeding range. Snowy plovers are listed as a

Nevada Species of Concern and the Pacific Coast population is federally listed as threatened under the Endangered Species Act. Subsequent exploratory shoreline surveys have been conducted along 16.7 km of suitable shoreline and have resulted in the discovery of an additional smaller breeding population of at least 10 adults on the Overton Arm, near Sand Island.

An effort to track and document these breeding efforts has been undertaken at both sites, with repeat visits timed at roughly once every two weeks at the Muddy River site and less frequent visits at Sand Island (Table 3). Additionally, surveys conducted adhering to the International Snowy Plover Survey Protocol have been conducted at both sites in order to contribute to a larger effort at the regional and North American level to determine distribution and abundance of snowy plovers. A replicate survey was conducted at the Muddy River site, as requested by the snowy plover state coordinator, 24 hours after the original survey in order to assess detectability.

**Table 3.** Survey sites and results of surveys conducted for snowy plovers within Lake Mead NRA in the 2007 breeding season through June 18.

Site	Date Surveyed						
	4/17/07	5/8/07*	5/10/07	5/25/07	6/4/07	6/10/07*	6/11/07§
Muddy River Delta	24 adults	28 adults	NA	22 adults, 8 juv.	NA	37 adults, 10 juv.	34 adults, 3 juv.
Sand Island	NA	NA	5 adults	NA	10 adults, 3 juv.	NA	NA

\* Survey using International Snowy Plover Survey Protocol.

§ Replicate survey using International Snowy Plover Survey Protocol.

NA Indicates a survey was not conducted at that site on that date.

Mr. Barnes has begun a literature search and review of snowy plover survey and monitoring techniques, as well as behavior, breeding biology, and habitat use in order to develop a survey and monitoring strategy to evaluate current and future breeding attempts at Lake Mead NRA. To date, eight peer reviewed journal articles have been reviewed. The ongoing literature review is reflected in the development of an electronic database of literature on the subject, as well as a database containing a summary of all sources for future reference

2. *Water Grab samples*– No water samples were requested this quarter.

## Project 7. Desert Bighorn Sheep Habitat Use Monitoring in Relation to Highway Development.

### *Phase I and II*

1. *GPS location data from collars on sheep will be downloaded weekly and converted into a format recognized by ArcGIS* – This quarter, as of March 16, 2007, seven weeks of data consisting of approximately 435 point locations were processed on 11 radio collars currently transmitting a signal. Although, typically 12 weeks of data are received in a quarter, Argos did not send information for two weeks in May; and three weeks of data collected in June are not reported herein. All data received were uploaded into the program Argos Data Converter T03 (Telonics, Inc.) and then exported to an Excel spreadsheet and converted into a useable format for ArcGIS. In ArcGIS, data were quality assured to remove extraneous information or to filter out bad fixes. Data were checked to identify sheep deaths or collar malfunctions.

2. *Field retrieval of collars will be attempted on all dead animals* – This quarter there were no bighorn sheep deaths documented.

## *Phase II*

1. *Provide technical assistance for project assessments and report* – Extensive technical assistance was provided last quarter to fulfill NPS requests. This quarter, no technical assistance was required.

### Other Activities Under Task Agreement

#### *Additional Efforts (Technical Assistance)*

At the request of NPS personnel, Mr. Barnes devoted parts of three days in the first week of April to planning and preparation for a field trip through Black Canyon for the Desert Bighorn Sheep Council Meeting.

Dr. Jaeger and Ms. Fletcher have worked on the development of deliverables to assist with NPS contract information for research and monitoring of upland birds. A meeting was held with Mr. Haley to review the proposed deliverables. A review was also solicited from Ms. Elisabeth Ammon (GBBO). Following those reviews, Dr. Jaeger and Ms. Fletcher met with Mr. Sappington (NPS, Lake Mead NRA GIS Specialist), Mr. Hutchenson (UNLV Harry Reid Center Staff), and Dr. Craig Palmer (UNLV PLI and Harry Reid Center, Ecological Monitoring Program Manager/ Data Management Specialist) regarding specific deliverables associated with habitat mapping and historical evaluations.

*Meetings Attended and Personal Development* – The following information comprises professional meetings, formal local meetings, and trainings attended by PLI personnel during this quarter. These meetings do not include the multiple and varied informal staff meetings conducted during this quarter with NPS personnel and other collaborators.

Mr. Barnes completed over 30 hours of field training at the Raptor Field Techniques Workshop, June 12-16, 2007, at the Linwood Springs Research Station in Stevens Point, Wisconsin.

*Professional Presentations, Publication, and Public Outreach* – The following comprise professional dissemination of information by individuals associated with this task agreement (identified by underlining>, but do not necessarily reflect projects directly covered by this task agreement.

*Public Outreach* – Jaeger J.R. Confused Taxonomy, Limited Distribution, and Restricted Opportunities: Conserving the Relict Leopard Frog. Invited lecture to campus community, April 12, 2007. Whitman College, Walla Walla, WA.

*Publications* – Dana L. Drake, Ronald Altig, James B. Grace, and Susan C. Walls. Occurrence of Oral Deformities in Larval Anurans. *Copeia*, 2007(2), pp. 449–458.

Submitted by:

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Margaret N. Rees, Principal Investigator

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06/30/2007

Date

