6-30-2009

Lake Mead National Recreation Area Sensitive Wildlife Species Monitoring and Analysis: Final Progress Report, Period Ending June 30, 2009

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QUARTERLY PROGRESS REPORT
University of Nevada, Las Vegas
Period Ending June 30, 2009

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
- All milestones and deliverables associated with the MSHCP project are on schedule
- Translocation field season has been completed
- Spring monitoring surveys have been completed
- Dana Drake, UNLV Research Assistant, has left the project

Project 2. Bald Eagle Winter Monitoring and Evaluation
- All MSHCP milestones and deliverables are on schedule

Project 3. Peregrine Falcon Monitoring and Evaluation
- The MSHCP projects are on schedule for all milestones and deliverables
- Peregrine falcon monitoring of breeding activities are ongoing and are nearing completion
- Method testing of active survey methodology has been completed
- Stacy Crowe was hired under part-time contract to assist with habitat modeling

Project 4. Assessment of Six Covered and Three Evaluation Bird Species
- Project is on schedule for all associated MSHCP milestones and deliverable
- Thrasher habitat modeling completed
- Completed compilation of historical location data for targeted songbird species
- Geodatabase created for data associated with targeted songbird surveys
- Field surveys initiated for targeted species at historical sites
- Field surveys conducted for intensive area searches

Project 5. Desert Tortoise Monitoring and Management
- Efforts for this project have been completed under this task agreement (as modified)

Project 6. Shorebird Monitoring on Lakes Mead and Mohave
- Twenty-four surveys were conducted on eight intensively monitored sites on Lakes Mead and Mohave

Project 7. Desert Bighorn Sheep Habitat Use Monitoring in Relation to Highway Development
- Data processing and field components were previously completed for this project

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 on June 30, 2009, activities that have occurred toward meeting actions in the statement of work are described below.

Note that several of the projects cover agreements between Clark County and Lake Mead National Recreation Area (LAME) under the Multiple Species Habitat Conservation Plan (MSHCP). To assist the NPS with reporting requirements and in consultation with Mr. Ross Haley (Task Agreement ATR) and Mr. Kent Turner (LAME Resource Management Chief), the format for reporting on several of these projects has been modified to match Clark County quarterly report requirements.

**Hiring and Student Opportunities**

Dana Drake, research assistant, working on the Relict Leopard Frog project has left employment under this task agreement. We have continued funding a graduate student part-time (10% effort) to assist with the Relict Leopard Frog surveys. We have continued an hourly contract for an undergraduate student to assist part-time mostly on songbird surveys and data entry. This quarter, we contacted Stacy Crowe to work part-time on modeling efforts for Peregrine Falcons.

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

The MSHCP project titled ‘Relict Leopard Frog Monitoring and Management’ (2005-NPS-476-P) was initiated on September 4, 2007. The following information has been formatted to meet Clark County quarterly report requirements.

**QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?**

This quarterly report describes milestones and deliverables as identified and numbered in the Annual Timeline and Work Plan for this project. All milestones and deliverables for this quarter have been accomplished as summarized below.

**Milestone 12. End of Translocation Program Field Season**

The translocation program was completed this quarter early. Tadpoles and frogs reared from partial egg masses collected in the Black Canyon this season were released at five existing translocation sites.

**Deliverable 14. Quarterly Progress Report**

A quarterly report summarizing efforts through March 31, 2009 was submitted to Clark County.

**Deliverable 15. Host Relict Leopard Frog Meeting**

The Relict Leopard Frog Conservation Team (RLFCT) meeting was hosted by the National Park Service at their Boulder City facility on April 22, 2009.

**Deliverable 17. Biennium Progress Summary Report**
A Biennium Progress Summary Report was submitted to Clark County this quarter.

**Other activities**

Spring field surveys were completed this quarter and assistance was provided for continued efforts to provide mark-recapture estimates at one site.

**QUESTION 2:** What, if any, problems were encountered? Briefly describe those problems and how they were dealt with.

No problems were encountered this quarter.

**QUESTION 3:** What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

None.

**QUESTION 4:** What is the calculated percent of work completed?

There are approximately 14 quarters (some partial) that constitute this project and 8 have been completed; therefore, approximately 57% of the project has been completed.

**QUESTION 5:** Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?

Identification of appropriate translocation sites within the Potential Management Zone for the Relict Leopard Frog has been a continuing challenge because of the limited availability of appropriate sites. Coordination and collaboration through the RLFCT with cosignatory state and federal agencies to the Conservation Assessment Strategy is continuing.

**QUESTION 6:** Is there anything else you want to tell the DCP about this project?

No.

**QUESTION 7:** What was produced during the reporting period?

1. Quarterly report (Deliverable 14)
2. Tadpoles for translocation efforts (Milestone 10, 12).
3. Field observations on the status of natural and experimental populations (Milestone 11)
4. A meeting and notes of the Relict Leopard Frog Conservation Team (Deliverable 13)
5. A Biennium Progress Summary Report (Deliverable 17)

Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary:

- **Milestone 1.** Contract Award and Mobilization: completed
- **Milestone 2.** Project Kick-off and Training Meeting: completed
- **Milestone 3.** Start of Coordination of Habitat Management Activities: completed
- **Milestone 4.** Start of Collaboration and Oversight of Population Estimation at Targeted Springs: completed
Milestone 5. Start of Assessment and Coordination of Compliance for Future Translocation Sites: completed (progress continuing)
Milestone 10. Start of Translocation Program (2009) Field Season: completed
Milestone 12. End of Translocation Program Field Season: completed
Milestones 13–21: Pending

Deliverable 1. Quarterly Progress Report: completed
Deliverable 2. Annual Work Plan and Detailed Timeline: completed
Deliverable 3. Data Management Plan: completed
Deliverable 4. Quarterly Progress Report: completed
Deliverable 5. Quarterly Progress Report: completed
Deliverable 6. Quarterly Progress Report: completed
Deliverable 7. Quarterly Progress Report: completed
Deliverable 8. Host RLFCT meeting: completed
Deliverable 9: Written Annual Report to RLFCT of Conservation Actions: completed
Deliverable 10: Annual Project Review Presentation: completed
Deliverable 11: Quarterly Progress Report: completed
Deliverable 12: GIS and Data Transfer to County: completed
Deliverable 13: Annual Work Plan and Detailed Timeline: completed
Deliverable 14: Quarterly Progress Report: completed
Deliverable 15: Host Relict Leopard Frog Meeting: completed
Deliverable 16: Quarterly Progress Report: pending
Deliverable 17: Biennium Progress Summary Report: completed
Deliverable 18–34: Pending

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

A summary of products for this project as described in the task agreement are provided below. The milestones and deliverables described for this project are associated with the MSHCP projects titled, ‘Bald Eagle Monitoring’ (2005-NPS-476-P) and the associated project ‘Bald Eagle Modeling’ (2005-NPS-609B-P). These projects were initiated on January 2, 2008. The following information has been formatted to match the quarterly report requirements of the Clark County MSHCP.

**QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?**

This quarterly report describes milestones and deliverables as identified and numbered in the Annual Timeline and Work Plan for the project, Bald Eagle Monitoring. Also included herein is reporting on milestones and deliverables for the associated project, Bald Eagle Modeling (2005-NPS-609B-P). All milestones and deliverables scheduled for this quarter have been accomplished, as summarized below.

**Deliverable 10. Quarterly Progress Report**
A quarterly report summarizing efforts for the period ending on March 31, 2009 was submitted to Clark County.

**Deliverable 11. Biennium Project Summary Report**

A Biennium Project Summary Report was submitted to Clark County this quarter.

**Other.**

We began work this quarter to summarize data for the final report on the winter counts.

**QUESTION 2:** What, if any, problems were encountered? Briefly, describe those problems and how they were dealt with?

No problems were encountered during this quarter.

**QUESTION 3:** What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

All scheduled activities were completed this quarter.

**QUESTION 4:** What is the calculated percent of work completed?

This project has approximately 12 quarters, and 6 quarters have been completed; therefore, approximately 50% of the project has been completed.

**QUESTION 5:** Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?

No problems are foreseen at this time.

**QUESTION 6:** Is there anything else you want to tell the DCP about this project?

No.

**QUESTION 7:** What was produced during the reporting period?

1. Quarterly Progress Report (Deliverable 10).

Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary:

For Project, 2005-NPS-540-P

| Milestone 1. Contract Awards and Mobilization | completed |
| Milestone 2. Project Kickoff & Training Meeting | completed |
| Milestone 3. Conduct 2008 Bald Eagle Count | completed |
| Milestone 4. Conduct 2009 Bald Eagle Count | completed |
Milestone 5. Not initiated

Deliverable 1. Work Plan: completed
Deliverable 2. Detailed Timeline: completed
Deliverable 3. Data Management Plan: completed
Deliverable 4. Quarterly Report: completed
Deliverable 5. Quarterly Report: completed
Deliverable 6. Quarterly Report: completed
Deliverable 7. Annual Project Data (2008 Data): completed
Deliverable 8. Annual Project Review and Presentation: completed
Deliverable 9. Quarterly Report: completed
Deliverable 10. Quarterly Report: completed
Deliverable 13-25: Pending

For Project, 2005-NPS-609B-P

Milestone 1. Contract Awards and Mobilization: completed
Milestone 2: Not initiated

Deliverable 1. Detailed Timeline: completed
Deliverable 2. Data Management Plan: completed
Deliverable 3. Annual Project Data Transfer: completed
Deliverable 5. Habitat Suitability Model: in progress
Deliverable 6. Habitat Suitability Map: in progress
Deliverable 8. Verbal Report (if requested): completed
Deliverable 4,7: Not initiated

Project 3. Peregrine Falcon Monitoring and Evaluation

The MSHCP projects titled ‘Peregrine Falcon Monitoring and Evaluation (Falco peregrinus)’ (2005-NPS-475-P) and the associated project ‘Peregrine Falcon Modeling’ (2005-NPS-609C-P) were initiated on March 3, 2008. The following information has been formatted to meet Clark County quarterly report requirements.

QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?

This quarterly report describes milestones and deliverables as identified and numbered in the Annual Timeline and Work Plan for this project and covers actions conducted on the associated project, 2005-NPS-609C-P, which covers technical aspects of this project. All deliverables for this quarter were accomplished, as summarized below.

Deliverable 10. Quarterly Progress Report

A report for the quarterly period ending on March 31, 2009 was submitted to Clark County.

Deliverable 11. Biennium Project Summary Report
A Biennium Project Summary Report was submitted to Clark County this quarter.

**Other.**

Monitoring of peregrine territories during the breeding season was begun the previous quarter and has continued throughout this quarter. Development of a quick survey method was concluded this quarter.

**QUESTION 2:** What, if any, problems were encountered? Briefly describe those problems and how they were dealt with.

No problems were encountered this quarter.

**QUESTION 3:** What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

All scheduled activities were completed this quarter.

**QUESTION 4:** What is the calculated percent of work completed?

There are approximately 9 quarters (some partial) that constitute this project and 6 quarters have been completed; therefore, approximately 67% of the project has been completed.

**QUESTION 5:** Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?

No problems are foreseen.

**QUESTION 6:** Is there anything else you want to tell the DCP about this project?

No.

**QUESTION 7:** What was produced during the reporting period?

1. A quarterly report (Deliverable 10)
2. Observations on reproductive efforts at known peregrine breeding sites and assessments of breeding success during 2009 (Milestone 5).
3. Exploratory surveys for territories at numerous sites.

Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary:

**Project, 2005-NPS-475-P**

| Milestone 1. | Contract Award and Mobilization: completed |
| Milestone 2. | Project Kick-off and Training Meeting: completed |
| Milestone 3. | Begin Peregrine Falcon Monitoring: completed |
| Milestone 4. | Complete Peregrine Falcon Monitoring: completed |
| Milestone 5. | Begin Peregrine Falcon Monitoring: completed |
Milestones 6-7: Pending

Deliverable 1. Quarterly Progress Report: completed
Deliverable 2. Annual Work Plan: completed
Deliverable 3. Detailed Timeline: completed
Deliverable 4. Data Management Plan: completed
Deliverable 5. Quarterly Progress Report: completed
Deliverable 6. Quarterly Progress Report: completed
Deliverable 7. Annual Project Review Presentation: completed
Deliverable 8. Quarterly Progress Report: completed
Deliverable 9. Annual Project Data: completed
Deliverable 10. Quarterly Progress Report: completed
Deliverable 13-21: Pending

**Project, 2005-NPS-609C-P**

Milestone 1. Contract Award and Mobilization: completed
Milestone 2: Pending

Deliverable 1. Detailed Timeline: completed
Deliverable 2. Data Management Plan: completed
Deliverable 3. Draft Conceptual Model: completed
Deliverable 4. Annual Project Data: completed
Deliverable 6. Oral Report: completed
Deliverable 5,7-10: Pending
Deliverable 14. Quarterly Progress Report

A quarterly report summarizing efforts for the period ending on March 31, 2009 was submitted to Clark County.

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

The following information summarizes efforts under the MSHCP projects titled ‘Historical and Current Assessment of Six Covered and Three Evaluation Bird Species’ (2005-NPS-542-P) and the associated project ‘Conceptual and Habitat Models for Six Covered and Three Evaluation Bird Species’ (2005-NPS-609A-P). The information has been formatted to match the quarterly report requirements of the Clark County MSHCP.

**QUESTION 1:** What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?

This quarterly report describes milestones and deliverables as identified and numbered in the Annual Timeline and Work Plan submitted for this project. Also reported here are actions conducted on the associated project, 2005-NPS-609A-P that covers technical aspects of the overall project. All milestones and deliverables identified for this quarter have been accomplished, as summarized below.

**Deliverable 14. Quarterly Progress Report**

A quarterly report summarizing efforts for the period ending on March 31, 2009 was submitted to Clark County.
Deliverable 15. Biennium Project Summary Report

A biennium project summary report was submitted to Clark County this quarter.


We completed historical location data mining (work associated with M3 and M12) last quarter, and these data are being used for our targeted field surveys. As part of this assessment, an ESRI geodatabase was created for storing spatial records and attributes related to the historical observation locations and data associated with the targeted surveys. The georeferenced observations are being used to provide not only the best estimate of the historic location when performing targeted surveys, but also in conjunction with an estimated zone of accuracy to filter meaningful locations to survey.

Milestone 7. Begin Intensive Area Surveys (2009 season)

Intensive bird surveys at four sites in and around Lake Mead NRA began in mid-April. To date nine surveys have been conducted at each of the four survey sites, for a total of 36 surveys. Data from the surveys is currently being entered into databases, and a quality assurance of these data will be conducted next quarter.

Activities associated with Project 2005-NPS-609A-P

Efforts continue on the habitat-modeling portion of this project. Final habitat suitability models and maps were completed for the Le Conte’s thrashers.

QUESTION 2: What, if any, problems were encountered? Briefly, describe those problems and how they were dealt with?

No problems were encountered.

QUESTION 3: What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

All scheduled activities were completed this quarter.

QUESTION 4: What is the calculated percent of work completed?

This project has approximately 13 quarters, 7 quarters have been completed; therefore, by this assessment approximately 54% of the project has been completed.

QUESTION 5: Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?

No problems are foreseen at this time.

QUESTION 6: Is there anything else you want to tell the DCP about this project?

No.
QUESTION 7: What was produced during the reporting period?

1. Observation data from Intensive Area Surveys 2009 (Milestone 7)
2. Observation data from targeted surveys associated with historical locations (Milestones 8)
3. Quarterly Progress Report (Deliverable 14)

Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary:

Project 2005-NPS-542-P

| Milestone 1. | Contract Award and Mobilization: completed |
| Milestone 2. | Project Kickoff & Training Meeting: completed |
| Milestone 3. | Begin Review and Compilation of Historical Data: completed |
| Milestone 4. | Begin Intensive Area Surveys: completed |
| Milestone 10-15: | Not initiated |

| Deliverable 1. | Annual Work Plan & Detailed Timeline: completed |
| Deliverable 2. | Data Management Plan: completed |
| Deliverable 3. | Quarterly Progress Report: completed |
| Deliverable 5. | Final Detailed Field Study Design and Protocol: completed |
| Deliverable 6. | Quarterly Progress Report: completed |
| Deliverable 7. | Quarterly Progress Report: completed |
| Deliverable 8. | Annual Project Review and Presentation: completed |
| Deliverable 10. | Written and Oral Reports: completed |
| Deliverable 11. | Quarterly Progress Report: completed |
| Deliverable 12. | GIS and Data Transfer: completed |
| Deliverable 15. | Biennium Project Summary: completed |
| Deliverable 17-30: | Not initiated |

Project 2005-NPS-609A-P

| Deliverable. | Data Management Plan: completed |
| Deliverable. | Verbal Report (if requested): completed |
| Deliverable. | Annual Bird Expert Team Meeting: completed |
| Deliverable. | Annual Report: completed |
| Deliverable | Draft Conceptual Models: in progress |
| Deliverable | Draft Habitat Suitability Models: in progress |
Project 5. Desert Tortoise Monitoring and Management

Deliverables and reporting for compliance monitoring described for Phase I of the task agreement have been completed. No other activity for this project is planned under the task agreement (as modified).

Project 6. Shorebird Monitoring on Lakes Mead and Mohave

The following information summarizes products as described in the task agreement. This is not an MSHCP project, thus the information herein is not presented in the format associated with those reporting requirements.

Monthly inventory and monitoring surveys – Ongoing monthly surveys were conducted on the regular eight intensively monitored sites on Lakes Mead and Mohave throughout the quarter with a total of 24 surveys completed (Table 1). All data collected during these surveys were entered into a database and have been shared with the GBBO. Although present in small numbers early in the season, no breeding evidence from Snowy Plovers was detected at either of the previous breeding areas.

Table 1. Survey sites and numbers of surveys conducted for aquatic and shorebirds on Lakes Mead and Mohave since March 2004 and during the current quarter.

<table>
<thead>
<tr>
<th>Lake and Site</th>
<th>Number of Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mar. 04 – Mar. 09</td>
</tr>
<tr>
<td>Lake Mead</td>
<td></td>
</tr>
<tr>
<td>Las Vegas Bay</td>
<td>64</td>
</tr>
<tr>
<td>Muddy River</td>
<td>62</td>
</tr>
<tr>
<td>Virgin River</td>
<td>62</td>
</tr>
<tr>
<td>Grand Wash</td>
<td>44</td>
</tr>
<tr>
<td>Bonelli Bay</td>
<td>12</td>
</tr>
<tr>
<td>Misc. sites</td>
<td>13</td>
</tr>
<tr>
<td>Lake Mohave</td>
<td></td>
</tr>
<tr>
<td>Arizona Bay</td>
<td>62</td>
</tr>
<tr>
<td>Nevada Bay</td>
<td>62</td>
</tr>
<tr>
<td>Willow Beach</td>
<td>59</td>
</tr>
<tr>
<td>Black Canyon</td>
<td>15</td>
</tr>
<tr>
<td>Misc. sites</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>470</td>
</tr>
</tbody>
</table>

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

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

Major elements of this project in the form of data retrieval, data management, and associated field efforts, have been completed. No requests for additional efforts on this project were made this quarter.
Other Activities Conduced Under or Associated With the Task Agreement

Personnel Development –

Ms. Fletcher completed her M.S. degree program his quarter with the School of Life Sciences, UNLV.

Mr. Barnes finished his second semester in May as a graduate student with the School of Life Science at UNLV. He also assisted a raptor specialist, Mr. Gene Jacobs, during personal time on May 31-June 6, 2009. The work was part of an ongoing study of breeding Red-shouldered Hawks and American Kestrels in central Wisconsin.

Technical Assistance and Regional Coordination –

At the request of Mr. Turner, data were compiled and slides were prepared for the SCOP Boulder Basin Adaptive Management Program meeting on June 22, 2009. The data constituted a summary of aquatic bird, falcon, and bald eagle monitoring in the area Boulder Basin.

At the request of NDOW, Dr. Jaeger assisted with Armargosa Toad surveys on May 11-13, 2009.

Presentations, professional outreach –

As part of Ms. Fletcher thesis defense, she presented publically to a fully packed room at UNLV which included numerous regional resource managers. The title of her hour-long presentation: Predicting the Occurrence of Elusive Species: a Multi-model Approach to Assessing Habitat Selection of Thrashers. Thesis defense, April 15, 2009. University of Nevada, Las Vegas. The reference for her thesis follows:


Submitted by:

Margaret N. Rees, Project Administrator

07/1/2009 Date