

Attachment A – SCOPE OF WORK

Project Title: Conserving the Florida Panther: Structuring

Incentives to Protect Panthers and Panther Habitat on Private Lands FWC Contract No. 13140

Project Title: Conserving the Florida Panther: Structuring Incentives to Protect Panthers and Panther Habitat on Private Lands

Principal Investigator: Dr. Elizabeth F. Pienaar

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Project Start Date: October 1, 2013

Project Duration: 2.25 years

Project Summary

The primary objective of this research is to integrate natural sciences and economics to investigate how and why different types of landowners respond to different panther habitat conservation incentives. A clear understanding of the type and size of incentives needed to engage heterogeneous landowners in panther habitat conservation, and how these incentives are linked to conservation outcomes, is required to attain biologically and economically efficient protection of panther habitat in existing and potential panther range. The objective is to provide insights into which incentives (financial incentives, regulatory relief and/or technical assistance) landowners prefer, and the potential costs of implementing these incentives. A combination of interviews and surveys will be used to collect the information needed to determine the minimum incentives required to attain conservation of panther habitat on private non-urban lands. Based on this information, insights on how to structure one or more trial incentive programs that may be implemented on the ground will be provided to the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (USFWS).

The secondary objective of this research is to translate research results into outreach materials to assist the FWC, USFWS and other stakeholder agencies in their efforts to conserve panther habitat. Outreach materials will be released electronically through the University of Florida IFAS Electronic Data Information Source (EDIS) system.

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BACKGROUND

Conservation of the Florida panther (*Puma concolor coryi*) depends on both the preservation of panther habitat on private lands and public tolerance of panthers. As documented by the Florida panther recovery plan, there are three limiting factors for the panther: habitat availability, prey availability, and lack of human tolerance (U.S. Fish and Wildlife Service, 2008). The U.S. Fish and Wildlife Service (2008) recognizes that “[h]abitat loss, degradation, and fragmentation is the greatest threat to panther survival, while lack of human tolerance threatens panther recovery... Potential panther habitat throughout the Southeast continues to be affected by urbanization, residential development, road construction, conversion to agriculture, mining and mineral exploration, and lack of land use planning that recognizes panther needs. Public support is critical to attainment of recovery goals and reintroduction efforts.” (U.S. Fish and Wildlife Service, 2008: ix).

The recovery strategy for the Florida panther calls for: (1) continued conservation of the panther and panther habitat in south Florida; (2) habitat conservation and expansion of the panther population into south central Florida, north of the Caloosahatchee River; (3) reintroduction of at least two additional viable panther populations, supported by appropriate habitat, in historic panther range, north of south-central Florida; and (4) increased public support for panther recovery through public awareness and education (U.S. Fish and Wildlife Service, 2008). There appears to be general consensus among natural scientists that preferred panther habitat includes dense understory vegetation for denning and stalking prey (Benson et al., 2008); forests are panthers’ preferred home range, although they also favor dry prairie and grasslands in close proximity to forests (Cox et al., 2006; see also Kautz et al., 2006); and development planning is required to reduce vehicle-related panther mortality (Hedrick & Fredrickson, 2010; Schwab & Zandbergen, 2011).

Landscape-level conservation of contiguous habitat across both public and private lands is required to attain the recovery of the Florida panther (e.g., Thatcher et al., 2009). Unfortunately, incomplete understanding of and accounting for the benefits and costs of habitat conservation by private and public agencies and landowners is resulting in rapid land use and land cover change and habitat loss. Habitat change is “an investment/disinvestment decision made in the context of a certain set of preferences, ‘value systems’, moral structures, endowments, information, technological possibilities, and social, cultural and institutional conditions” (Pascual and Perrings, 2007: 256). Accordingly, habitat conversion is driven by social, economic and institutional conditions that frame decisions by landowners, government agencies, and other stakeholders.

An array of regulatory and incentive-based mechanisms has been created to protect panther habitat across time and space. The U.S. Endangered Species Act (ESA) provides the regulatory mechanism by which panther habitat may be protected. However, the ESA only applies under specific Federal permitting conditions. And existing approaches to mitigation may not attain habitat contiguity. As such, there is increasing recognition that regulation must be augmented by voluntary habitat conservation mechanisms that target diverse, heterogeneous private landowners (e.g., Wilcove and Lee, 2004; Wissel and Wätzold, 2010; Sorice et al., 2011). These habitat conservation incentives include technical assistance programs, regulatory assurances, and financial incentives.

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Technical assistance and regulatory assurance programs that may be used to conserve panther habitat include habitat conservation plans, safe harbor agreements, candidate conservation agreements, 10J populations, and the ‘no surprises’ policy. Existing and potential financial incentives to conserve panther habitat include conservation easements, direct compensation payments, tax relief, purchase of development rights, tradable development rights, conservation banking, payments for ecosystem services, auctions for biodiversity conservation, and smart subsidies for habitat conservation (e.g. Pascual and Perrings, 2007; Parkhurst et al., 2002; Ferraro and Kiss, 2002). Only a subset of these programs has been applied to conservation of Florida panther habitat on private lands.

A key rationale for implementing voluntary conservation incentive programs is that these programs recognize the political, social and economic realities of habitat conservation. There is considerable heterogeneity across landowners in terms of attitudes towards habitat conservation, costs of conservation, preferred land management practices, and appropriate mechanisms to incentivize habitat conservation. In the absence of appropriate incentives to transfer the social value of habitat conservation to landowners, insufficient habitat will be conserved on private lands. Given heterogeneity among landowners and conservation funding limits, it is important to consider how various existing and potential programs may contribute to the optimal conservation of panther habitat by different types of landowners. For example, landowners who are willing to engage in habitat conservation but lack the necessary information or expertise will likely respond to technical assistance programs such as habitat conservation plans. Landowners who require regulatory assurances are likely to respond to programs such as safe harbor agreements. Landowners who lack the funds to implement habitat conservation on their land require financial incentives. And a combination of incentives may persuade landowners who are currently opposed to habitat conservation to engage in panther habitat conservation.

Although there is a growing literature on various mechanisms to incentivize habitat conservation on private lands, there has been no systematic, scientific assessment of the biological and economic effectiveness of current programs to conserve Florida panther habitat. An assessment of additional programs that may be required to incentivize the conservation of contiguous habitat across private and public lands is also missing. In the absence of this information, efforts to conserve panther habitat in existing and future range are likely to be inefficient or ineffective.

The primary objective of this research is to integrate natural and social sciences (in particular economics) to investigate how different types of landowners are likely to respond to different panther habitat conservation incentives. A clear understanding of the type and size of incentives needed to engage landowners in panther habitat conservation, and how these incentives are linked to conservation outcomes, is required to attain biologically and economically efficient protection of panther habitat in existing and potential panther range. The objective is to provide insights on how to structure one or more trial incentive programs that may be implemented on the ground. The secondary objective of this research is to translate research results into outreach materials to assist the U.S. Fish and Wildlife Service, the Florida Fish and Wildlife Conservation Commission (FWC) and other stakeholder agencies in their efforts to conserve panther habitat.

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SUPPORT OF THE MISSION OF THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

This applied research project will support the Commission’s mission by providing scientific data that may be used to inform management decisions for the Florida panther and the panther’s habitat. The Commission is a member of the Florida Panther Recovery Implementation Team, which is focusing on means to expand the panther’s range. A key priority of the team is to investigate incentive programs for private landowners to conserve and restore panther habitat. This project will inform and complement those efforts.

DELIVERABLE #1

Draft report that synthesizes existing research on the Florida panther and potential incentive programs that have been used in the protection of other predators in the USA.

i. Specific Project Deliverables & Associated Tasks

Existing research into the Florida panther and potential incentive programs that have been used in the protection of other predators in the USA will be synthesized into a report. This report will include information from:

- peer-reviewed journal articles, working papers and reports pertaining to the Florida panther;
- relevant human-dimensions literature pertaining to predators in the USA (e.g. wolf management); and
- existing policies and programs that may be used to address human-panther conflict (e.g. conservation easements, conservation banking).

The objective of the report is to identify and synthesize existing knowledge about management of the Florida panther. The contents of the report will be used to structure a series of questions to be implemented during semi-structured interviews with key stakeholders. The report, together with semi-structured interviews, will provide necessary information to structure a choice experiment survey, which will be used to investigate appropriate incentives for landowners to protect panther habitat on their lands.

ii. Minimum Level of Performance

Production of a first draft report

iii. Documentation / Criteria Used as Evidence of Performance

A draft report will be distributed to the FWC and USFWS for comment and feedback within the first four months of the project. This report will include information from:

- peer-reviewed journal articles, working papers and reports pertaining to the Florida panther;

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- relevant human-dimensions literature pertaining to predators in the USA (e.g. wolf management); and
- existing policies and programs that may be used to address human-panther conflict (e.g. conservation easements, conservation banking).

The objective of the report is to identify and synthesize existing knowledge about management of the Florida panther.

iv. Timeline for Completion

Draft report to be written and distributed to FWC and USFWS by 31 December 2013

DELIVERABLE #2

Second draft of the report on existing Florida panther management practices and potential incentive programs

i. Specific Project Deliverables & Associated Tasks

Same as (i) for Deliverable 1

ii. Minimum Level of Performance

Production of a second draft report

iii. Documentation / Criteria Used as Evidence of Performance

Same as (iii) for Deliverable 1. The report will address comments from FWC and USFWS on Deliverable 1.

iv. Timeline for Completion

Second draft report to be written and distributed to FWC and USFWS by 31 March 2014

DELIVERABLE #3

Final version of report to be distributed to FWC and USFWS

i. Specific Project Deliverables & Associated Tasks

Same as (i) for Deliverable 1

ii. Minimum Level of Performance

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Production of a final report

iii. Documentation / Criteria Used as Evidence of Performance

Same as (iii) for Deliverable 1. The report will address comments from FWC and USFWS on Deliverable 2.

iv. Timeline for Completion

Final report to be written and distributed to FWC and USFWS by 30 June 2014.

All associated EDIS documents to be written and submitted for online publication by July 2014. EDIS documents will be released between October 2013 and June 2014.

DELIVERABLE #4

Progress report on the Semi-structured interviews with stakeholders in the management and protection of the Florida panther and panther habitat

i. Specific Project Deliverables & Associated Tasks

Semi-structured interviews will be utilized to assess stakeholders' perceptions of the costs and benefits of living with Florida panthers, and necessary interventions to adequately protect the panther and panther habitat. Semi-structured interviews are interviews during which respondents are presented with a set of identical questions, and then based on their responses, additional unscripted questions are asked by the interviewer. Individuals/agencies to be interviewed include: ranchers and other agricultural landholders (landowners, leaseholders, ranging from small-scale to large-scale operations); government agencies (e.g. USFWS, FWC, NRCS, natural scientists); NGOs (e.g. Defenders of Wildlife); and land developers.

Topics to be discussed include:

- private and public benefits of protecting the Florida panther and panther habitat
- private and public costs associated with the protection of the Florida panther and panther habitat
- the structure of current programs/incentives to protect the Florida panther and panther habitat
- preferred programs/incentives/policies for ensuring continued protection of the Florida panther and panther habitat
- respondents' opinions about current efforts to protect the Florida panther and panther habitat

ii. Minimum Level of Performance

A minimum of 20 semi-structured interviews with various stakeholders will be completed by December 2013

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Further semi-structured interviews will be conducted as needed during the development of the choice experiment survey

iii. Documentation / Criteria Used as Evidence of Performance

Results of the semi-structured interviews will be aggregated and released as a report. This report will be sent to the interviewees for their comments prior to submission to the FWC and USFWS. Interviewee responses will remain confidential and will not be shared without interviewees' permission. All documentation of the interviews will remain with Dr. Pienaar, as per the requirements of the University of Florida Institutional Review Board (IRB). IRB approval of the semi-structured interviews has already been obtained (UFIRB #2103-U-453).

Key insights into stakeholders' opinions about Florida panther management and/or appropriate incentives for panther habitat protection on private lands will be released as memos to the FWC, USFWS and the Florida Panther Recovery Implementation Team to assist in panther recovery efforts.

iv. Timeline for Completion

Semi-structured interviews will be conducted in October and November 2013.

The report on the results of the semi-structured interviews will be sent to the FWC on 30 September 2014.

DELIVERABLE #5

Annual report that summarizes reports generated to date, survey results to date and a list of presentations given and publications produced.

i. Specific Project Deliverables & Associated Tasks

The annual report will track the progress made on the project to date.

ii. Minimum Level of Performance

Production of an annual report

iii. Documentation / Criteria Used as Evidence of Performance

The annual report will include a summary of reports created during the past year as well as any preliminary survey results and a list of presentations given and publications produced. The annual report will also include a progress report of work accomplished to date.

iv. Timeline for Completion

The annual report will be distributed to the FWC and USFWS by 31 December 2014

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DELIVERABLE #6

Report on the design and implementation of the choice experiment survey.

i. Specific Project Deliverables & Associated Tasks

Deliverables #1 to #3 (identify and synthesize existing knowledge about existing conservation tools to protect panther habitat on private lands) and Deliverable #4 (results of semi-structured interviews) will be used to structure a choice experiment survey. This choice experiment survey will be used to investigate appropriate incentives for landowners to protect panther habitat on their lands. Both FWC and USFWS input into the design of the survey will be sought. In particular, input on which habitat management/conservation policies would support the recovery of the Florida panther will be elicited from the FWC and USFWS. Feedback will also be sought from FWC and USFWS about which counties north of the Caloosahatchee River should be targeted for survey implementation. However, Dr. Elizabeth Pienaar will determine the final survey design and implementation strategy.

ii. Minimum Level of Performance

Production of a report on the design and implementation of the choice experiment survey

iii. Documentation / Criteria Used as Evidence of Performance

The report will include a copy of the choice experiment survey and a summary of how many surveys were printed and mailed

iv. Timeline for Completion

The report is due by 31 March 2015

DELIVERABLE #7

Draft report on Choice experiment survey of agricultural/ranching landowners and leaseholders in existing panther range and north of the Caloosahatchee River (e.g. in the Glades, Charlotte, Sarasota, Desoto and Highlands counties)

i. Specific Project Deliverables & Associated Tasks

The choice experiment survey will focus on incentives to conserve panther habitat. Choice experiments are a modeling approach, which may be used to determine how individuals choose between different conservation programs. Respondents are asked to choose between different programs that vary in attributes (e.g. conservation action required, type and size of incentive, and duration of the program). Based on respondents' choices, it is possible to determine which program attributes landowners prefer, which in turn provides insights into how panther habitat conservation programs should be structured to attract landowners.

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Rather than focusing purely on existing habitat conservation programs, the study will also focus on new or modified landowner incentive programs for the panther. The purpose of the choice experiments is to present respondents with multiple combinations of management/incentive programs, and to ask the respondents to choose preferred programs. These choices will then be analyzed to determine precisely which aspects of habitat conservation programs create the greatest conservation incentive across different landowners. The objective of the choice experiments is to determine the optimal design of conservation incentive programs in terms of:

- characteristics of panther habitat protected;
- restrictions on land use/land management to ensure effective protection of panther habitat;
- type, size and structure of incentives;
- method by which the incentive program is financed;
- duration of program; and
- monitoring and compliance procedures.

The survey will be implemented in both existing panther range and in potential panther range.

Both FWC and USFWS input into the design of the survey will be sought. In particular, input on which habitat management/conservation policies would support the recovery of the Florida panther will be elicited from the FWC and USFWS. Feedback will also be sought from FWC and USFWS about which counties north of the Caloosahatchee River should be targeted for survey implementation. However, Dr. Elizabeth Pienaar will determine the final survey design and implementation strategy.

Survey data will be used to:

- identify preferred landowner incentives/management programs for the Florida panther, and whether these preferred programs vary by land-use type or geographic area;
- estimate costs of preferred programs; and
- provide guidance on practical means to implement preferred management programs.

Research findings are intended to assist the relevant agencies in targeting and implementing incentive-based panther habitat protection programs on private lands. In particular, the results of the choice experiments will be used to provide guidance on one or more trial conservation programs that may be implemented on private lands.

In addition to choice experiment questions, the survey will include questions to determine respondents' tolerance of the Florida panther (e.g. the perceived risk of living with Florida panthers), knowledge of the Florida panther; type of work/income sources; outdoor/recreational activities; and political and environmental attitudes. These factors may be key determinants of which management programs respondents prefer, and may provide further insight into how landowner preferences may be altered over time through outreach activities.

Based on the choice experiment results and estimated incentive program costs, guidance on one or more trial incentive programs that may be implemented on the ground will be provided, including details on how the program(s) should be structured (based on the choice experiment results). The ultimate objective

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of this research is to find practical solutions to engage private landowners in protection of panther habitat on their land, in recognition of the fact that the recovery of the Florida panther cannot be attained without the cooperation of private landowners.

ii. Minimum Level of Performance

Results of the choice experiment survey will be aggregated and released as aggregate results in a draft report. The report will detail which incentives appeal to which type of landowner (e.g. based on location of land, size of land holding, land uses, income sources, attitudes towards conservation, hunting activity, etc.) The choice experiments will be used to identify both what landowners require as a conservation incentive and also what characteristics of these landowners drive that choice. Once minimum incentives have been identified and estimated, approximate costs of implementing different types of incentive or conservation program will be calculated. More specifically, approximate costs of implementing incentives at different scales will be estimated. These estimated program costs will also be included in the report.

iii. Documentation / Criteria Used as Evidence of Performance

The draft report will provide initial analyses of aggregated survey results. Final analysis of the survey data will also be shared with the FWC and USFWS in the form of a report and memos. Economic insights into programs or incentives that should result in conservation of panther habitat on private lands (based on the survey results) will be released to the FWC and USFWS in the form of a white paper. Research findings will also be released as peer-reviewed journal publications, conference papers, and workshop presentations.

It will remain at the discretion of both the FWC and USFWS whether the reports and other documents generated by this research will be used to create and implement one or more trial programs on the ground to incentivize landowners to protect panther habitat on their land.

iv. Timeline for Completion

January – February 2014: design choice experiment survey

March 2014: pre-test survey

April 2014: modify survey based on pre-test results

May - July 2014: implement survey

August 2014: non-respondent follow-up

August - September 2014: data entry and data cleaning

September – October 2014: first round of data analysis

November 2014: production of initial report on survey results and additional data analysis

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November 2014 – January 2015: additional data analysis

The draft report on Choice Experiment with descriptive statistics will be due on 30 June 2015.

DELIVERABLE #8

Second draft of report on Choice Experiment results including a statistical analysis of survey data.

i. Specific Project Deliverables & Associated Tasks

See (i) under Deliverable 7.

ii. Minimum Level of Performance

Production of second draft report

iii. Documentation / Criteria Used as Evidence of Performance

Same as (iii) under Deliverable 7. The second draft report will also address comments or edits submitted by either FWC or USFWS.

iv. Timeline for Completion

Second draft report is due on 30 September 2015.

DELIVERABLE #9

Final report for project *Conserving the Florida Panther: Structuring Incentives to Protect Panthers and Panther Habitat on Private Lands*.

i. Specific Project Deliverables & Associated Tasks

Final analysis of the survey data will be included in the final report to the FWC and USFWS. Economic insights into programs or incentives that should result in conservation of panther habitat on private lands (based on the survey results) will be released to the FWC and USFWS in the form of a white paper. Research findings will also be released as peer-reviewed journal publications, conference papers, and workshop presentations.

ii. Minimum Level of Performance

Production of a final report

iii. Documentation / Criteria Used as Evidence of Performance

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Final report will include memos and a white paper with policy and program recommendations for conserving panther habitat on private lands.

iv. Timeline for Completion

Final report is due on 30 December 2015.

FINANCIAL CONSEQUENCES

In the event that the specific deliverables cannot be completed as described or within the timeline specified, modifications to deliverables must be negotiated with and approved in writing by the FWRI project manager.

COMPENSATION AND PAYMENT

A. FEE SCHEDULE see below

B. INVOICE SCHEDULE see below

C. TRAVEL EXPENSES not applicable

D. FORMS AND DOCUMENTATION not applicable

Quarter	Invoice Due Date	Deliverable #	Deliverable	Deliverable Due Date	Amount
10/1/13 – 12/31/13	1/15/14	Deliverable #1	First draft report on existing Florida panther management practices and potential incentive programs	12/31/13	\$11,613.46
01/01/14 – 03/31/14	4/15/14	Deliverable #2	Second draft of report on existing Florida panther management practices and potential incentive programs	3/31/14	\$11,613.46
04/01/14 – 06/30/14	7/15/14	Deliverable #3	Final report on existing Florida panther management practices; will include a list of any peer-reviewed publications or presentations produced from this work	6/30/14	\$11,613.46
07/01/14 – 09/30/14	10/15/14	Deliverable #4	Report on the results of the semi-structured interviews	9/30/14	\$11,613.46
10/1/14 – 12/31/14	1/15/15	Deliverable #5	Annual report that summarizes reports generated to date, survey results to date and a list of presentations given and publications submitted for review	12/31/14	\$11,613.46
01/01/15 – 03/31/15	4/15/15	Deliverable #6	Report on the design and implementation of the Choice experiment survey	3/31/15	\$11,613.46
04/01/15 – 06/30/15	7/15/15	Deliverable #7	First draft report on results from Choice Experiment with descriptive statistics	6/30/15	\$11,613.46
07/01/15 – 09/30/15	10/15/15	Deliverable #8	Second draft of report on Choice Experiment results including a statistical analysis of survey data	9/30/15	\$5,806.72
10/01/15 – 12/31/15	1/15/16	Deliverable #9	Final report, memos and white paper with policy/program recommendations	12/30/15	\$5,806.73
Total					\$92,907.65

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NOTE: The dollar amounts presented in this budget have been rounded to the nearest dollar. The cost of the project will be \$92,907.65 in total.

MONITORING SCHEDULE

See report schedule under Compensation and Payment

INTELLECTUAL PROPERTY RIGHTS

See Contract for applicable terms and conditions related to intellectual property rights

SUBCONTRACTS

See Contract for applicable terms and conditions related to subcontracts.

INSURANCE

See Contract for applicable terms and conditions related to insurance.

SECURITY AND CONFIDENTIALITY

See Contract for applicable terms and conditions related to security and confidentiality.

Permission to conduct both the semi-structured interviews and the choice experiment survey must be obtained from the Behavioral/Nonmedical Institutional Review Board (IRB) at the University of Florida. As per the IRB's website, "The Behavioral/NonMedical IRB (IRB02) is responsible for reviewing and monitoring a subset of the research with human subjects conducted at the University of Florida. This board reviews research studies that involve: behavioral observations/recordings, non-invasive physiological recordings, analysis of documents that were previously gathered for non-research purposes, evaluation of behavioral/social interventions or manipulations, educational assessments, interviews, surveys, cognitive tests, and taste/food evaluations of wholesome food within FDA regulations" (see: <http://irb.ufl.edu/>).

For all protocols the IRB02 assessment of risks and anticipated benefits involves:

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- 1) identifying the risks associated with the research, as distinguished from the risks the participants would encounter even if not participating in research;
- 2) determining that the risks will be minimized to the extent possible;
- 3) identifying the probable benefits to be derived from the research;
- 4) determining that the risks are reasonable in relation to the benefits to research participants, if any, and the importance of the knowledge to be gained;
- 5) assuring that potential participants will be provided with an accurate and fair description of the risks or discomforts and the anticipated benefits; and
- 6) determining intervals of periodic review, and, where appropriate, determining that adequate provisions are in place for monitoring the data collected.

In addition, the IRB02 will determine the **adequacy of the provisions to protect the privacy of research participants and to maintain the confidentiality of the data**, and where the participants are likely to be members of a vulnerable population, determine that appropriate additional safeguards are in place to protect the rights and welfare of these research participants.

Based on these protocols, raw data collected during this research, in particular the names and addresses of respondents, will not be released to the FWC. However, aggregated data and full analysis of all data will be provided to the FWC.

RECORD KEEPING REQUIREMENTS

See Contract for applicable terms and conditions related to record keeping requirements.

NON-EXPENDABLE PROPERTY

This section is not applicable.

PURCHASE OR IMPROVEMENT OF REAL PROPERTY

This section is not applicable.

SPECIAL PROVISIONS FOR CONSTRUCTION CONTRACTS

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This section is not applicable.

RENEWAL OF THE CONTRACT

Subsection 287.057(13), F.S., provides that the Contracts for commodities or contractual services may be renewed for up to two (2) additional one-year periods.

BUDGET

	2013-2014	2014-2015	Total
Post-doctoral research fellow:			
Salary	22,300	44,700	67,000
Fringe benefits (7.2%)	1,606	3,218	4,824
Survey design and implementation:			
Survey pre-tests	1,000	0	1,000
Survey printing and mailing	9,640	0	9,640
Non-respondent follow-up	0	2,000	2,000
Travel costs	N/A	N/A	N/A
Total direct costs	34,546	49,918	84,464
Indirect cost (10% rate for a fixed price contract)	3,455	4,992	8,446
TOTAL COSTS	38,000	54,910	92,910

BUDGET JUSTIFICATION

Research costs include both the costs of designing and implementing the survey, and funding for research assistance. A mail-based survey will be implemented. To reduce survey implementation costs, the survey will be printed and posted by the University of Florida postal service. Survey costs include: production of the mail survey; reminder cards to increase survey response rates; envelopes and postage for respondents to return completed surveys; and non-respondent follow-up phone calls.

Given the scope of this research effort, a post-doctoral research fellow will be funded for 18 months to assist with preliminary field research, and survey design, implementation, and analysis. The research fellow will be entirely responsible for coding survey responses and creating data files in preparation for data analysis. The research fellow will assist with the preparation of reports, memos, white papers, journal submissions and presentations.

Travel costs are already supported through \$3,120 in funds that were allocated to Dr. Pienaar by the Renewable Resources Extension Act. As such, travel costs are excluded from the budget.

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BIBLIOGRAPHY

Beier, P., M. R. Vaughan, M. J. Conroy & H. Quigley (2006) “Evaluating Scientific Inferences about the Florida Panther”, *The Journal of Wildlife Management*, 70(1): 236-245.

Belden, R. C., W. B. Frankenberger, R. T. McBride & S. T. Schwikert (1988) “Panther Habitat Use in Southern Florida”, *The Journal of Wildlife Management*, 52(4): 660-663.

Benson, J. F., M. A. Lotz & D. Jansen (2008) “Natal Den Selection by Florida Panthers”, *The Journal of Wildlife Management*, 72(2): 405-410.

Cox, J. J., D. S. Maehr & J. L. Larkin (2006) “Florida Panther Habitat Use: New Approach to an Old Problem”, *The Journal of Wildlife Management*, 70(6): 1778-1785.

Ferraro, P. J., and A. Kiss. 2002. Direct payments to conserve biodiversity. *Science* 298: 1718-1719.

Hedrick, P. W. & R. Fredrickson (2010) “Genetic Rescue Guidelines with Examples from Mexican Wolves and Florida Panthers”, *Conservation Genetics*, 11: 615-626.

Kautz, R., R. Kawula, T. Hoctor, J. Comiskey, D. Jansen, D. Jennings, J. Kasbohm, F. Mazzotti, R. McBride, L. Richardson & K. Root (2006) “How Much is Enough? Landscape-Scale Conservation for the Florida Panther”, *Biological Conservation*, 130: 118-133.

Langin, C. & S. K. Jacobson (2012) “Risk and Residency Influences on Public Support for Florida Panther Recovery”, *Wildlife Society Bulletin*, 36(4): 713-721.

Maehr, D. S., E. D. Land, D. B. Shindle, O. L. Bass & T. S. Hoctor (2002) “Florida Panther Dispersal and Conservation”, *Biological Conservation*, 106: 187-197.

Maehr, D. S. (1990) “The Florida Panther and Private Lands”, *Conservation Biology*, 4(2): 167-170.

Mattson, D. J., K. L. Byrd, M. B. Rutherford, S. R. Brown & T. W. Clark (2006) “Finding Common Ground in Large Carnivore Conservation: Mapping Contending Perspectives”, *Environmental Science & Policy*, 9: 392-405.

Parkhurst, G. M., J. F. Shogren, C. Bastian, P. Kivi, J. Donner, and R. B. W. Smith. 2002. Agglomeration bonus: an incentive mechanism to reunite fragmented habitat for biodiversity conservation. *Ecological Economics* 41: 305-328.

Pascual, U., and C. Perrings. 2007. Developing incentives and economic mechanism for in situ biodiversity conservation in agricultural landscapes. *Agriculture, Ecosystems and Environment* 121: 256-268.

Schwab, A. C. & P. A. Zandbergen (2011) “Vehicle-Related Mortality and Road Crossing Behavior in the Florida Panther”, *Applied Geography*, 31: 859-870.

Attachment A – SCOPE OF WORK

Project Title: Conserving the Florida Panther: Structuring

Incentives to Protect Panthers and Panther Habitat on Private Lands FWC Contract No. 13140

Sorice, M. G., W. Haider, J. R. Conner, and R. B. Ditton. 2011. Incentive structure of and private landowner participation in an endangered species conservation program. *Conservation Biology* 25(3): 587-596.

Thatcher, C. A., F. T. van Manen & J. D. Clark (2009) “A Habitat Assessment for Florida Panther Population Expansion into Central Florida”, *Journal of Mammology*, 90(4): 918-925.

U.S. Fish and Wildlife Service (2008) Florida Panther Recovery Plan (*Puma concolor coryi*), Third Revision, U.S. Fish and Wildlife Service, Atlanta, Georgia. 217pp.

Wilcove, D. S., and J. Lee. 2004. Using economic and regulatory incentives to restore endangered species: lessons learned from three new programs. *Conservation Biology* 18(3): 639-645.

Wissel, S., and F. Wätzold. 2010. A conceptual analysis of the application of tradable permits to biodiversity conservation. *Conservation Biology* 24(2): 404-411.