

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

[REDACTED] Final 3/22/13

Title: Alleged Scientific Misconduct re: new American burying beetle Section 7 map based on a model, and other related matters. (ESO-S0000328)

Summary of alleged misconduct (ESO-S0000328):

The Complainant listed 29 allegations regarding the scientific misconduct about a new American burying beetle (ABB) Section 7 map that was based on a model and other related matters. The complaint focused on three subjects at the Service’s Oklahoma Ecological Services Field Office (OKESFO). After reviewing the 29 issues, the Scientific Integrity Review Panel (SIRP) found that many issues contained several allegations. In all, the SIRP identified 37 distinct allegations.

Background:

On May 15, 2012 the Office of the Executive Secretariat in the Department of the Interior (DOI) received a complaint, submitted by the Complainant, alleging scientific misconduct by Dr. Dixie Porter, Mr. Luke Bell [REDACTED] of the FWS’s OKESFO. The BSIO evaluated the allegations and their basis and on July 9, 2012, found that the allegations against a bureau employee may have merit. At the request of the BSIO, the bureau head agreed to convene a SIRP to conduct a further inquiry into these allegations. The SIRP reviewed the allegations, conducted a fact-finding, and addressed the “significance of the alleged misconduct and explained why the conduct does or does not constitute a serious deviation from accepted practices under institutional or general scientific and scholarly standards” (Appendix D, 305 DM 3 Integrity of Scientific and Scholarly Activities).

The SIRP was comprised of:

1. A regional office branch chief, [REDACTED] with expertise in the application of sections 7 and 10 of the Endangered Species Act (ESA), and 18 years of experience as a supervisor of fish and wildlife biologists conducting policy oversight of science-based applications under the FWS’s section 7 and 10 programs.
2. A field office biologist, FWS Ecological Services, with expertise and 12 years of experience in applications of the ESA [REDACTED]
3. A research statistician, USGS [REDACTED] with expertise and 15 years of experience in mathematical modeling [REDACTED]
4. The Chair of the SIRP, a senior scientist, [REDACTED] with expertise in the DOI scientific integrity policy and long-time experience as a Regional Director, supervisor and manager.

In accordance with DOI policy, the SIRP evaluated the evidence provided in the complaint and other information collected in the course of its deliberations to determine if scientific misconduct and/or loss

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

[REDACTED] Final 3/22/13

of scientific integrity have occurred in the situation under consideration. The SIRP relied on the following definitions of scientific misconduct and loss of scientific integrity per 305 DM 3.5 M:

Definition of scientific misconduct/loss of scientific integrity:

Scientific misconduct:

A. Fabrication--Making up data or results and recording or reporting them (Federal Policy on Research Misconduct, 65 FR 76260-76264, December 6, 2000). Fabrication does not include documented use of modeling or statistical techniques.

B. Falsification--Manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record (Federal Policy on Research Misconduct, 65 FR 76260-76264, December 6, 2000).

C. Plagiarism--The appropriation of another person's ideas, processes, results, or words without giving appropriate credit (Federal Policy on Research Misconduct, 65 FR 76260-76264, December 6, 2000). In a related way, authors are strongly cautioned not to repeat the reuse (word for word) of large portions of their previously published text and ideas without citation to the previously published work to avoid self-plagiarism.

D. Misconduct also includes: (a) intentionally circumventing policy that ensures the integrity of science and scholarship, and (b) actions that compromise scientific and scholarly integrity. Scientific and scholarly misconduct does not include honest error or differences of opinion.

Findings:

Scientific misconduct and a loss of scientific integrity:

Based on the preponderance of evidence, the SIRP found that **scientific misconduct and a loss of scientific integrity occurred** in conjunction with the following allegations:

1. [REDACTED]
2. "[REDACTED]"

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

[REDACTED] Final 3/22/13

3. "[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]"

4. "[REDACTED]
[REDACTED]
[REDACTED]."

Loss of scientific integrity:

Based on the preponderance of evidence the SIRP also found that **loss of scientific integrity occurred** in conjunction with the following allegations:

5. [Note: this allegation in the complaint was not clearly articulated so the following text paraphrases the original complainant's text.] Luke Bell's denial of staff requests to review the draft justification for the new ABB range map does not adhere to the Department's Code of Scientific and Scholarly Conduct for communicating the results of scientific and scholarly activities in a clear, honest, objective, thorough, accurate, and timely manner.

6. "[REDACTED]
[REDACTED]
[REDACTED]"

These findings are all related to activities that collectively resulted in impeding the free flow of scientific information within the Oklahoma Ecological Services Field Office (OKESFO) of the Fish and Wildlife Service (FWS) and compromised the scientific integrity of the range map for the endangered American burying beetle (ABB) that is used for ESA, Section 7 compliance activities in Oklahoma.

All of the remaining allegations submitted by the complainant were not found to have merit.

Basis for the SIRP Findings (allegations 1-4): The preponderance of evidence provided by interview responses and documents obtained and reviewed by the SIRP supports a finding that:

(1) Mr. Bell adapted the C&H ABB range map, in coordination with Dr. Porter, to produce a new Section 7 (S7) range map for the ABB that replaced a county-based ABB range map used for S7 compliance purposes;

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

Final 3/22/13

(2) SIRP review of the new S7 range map revealed serious flaws from a modeling perspective and inconsistency with FWS S7 policy to err on the side of the listed species in cases of uncertainty;

(3) Mr. Bell used an improper peer review process to finalize the new S7 range map; and

(4) Dr. Porter and Mr. Bell have created an office work environment that impedes the free flow of scientific and scholarly information that facilitated the scientific integrity of the ABB S7 range map to be compromised.

Modeling Errors: Independent analyses by modeling experts concluded that use of the ABB range map presented in the C&H paper, as adapted by Luke Bell using a 0.5 probability of occurrence threshold (Wilson et al. 2004), is seriously flawed because:

(1) Mr. Bell did not justify the basis for using the 0.5 value in a reasoned way. The SIRP expert states in his review, "An important technical point is that MAXENT does not produce estimates of occurrence probability, despite that its output is often misinterpreted as such, including in the paper by Crawford and Hoagland (2010)."

(2) Another modeling expert found omissions and inaccuracies in the C&H paper including: (a) the ABB range boundary is contradicted by the data used in the modeling because some ABB presence observations lie outside the stated range; (b) the suggestion by C&H that the stated range is truncated on the west is contradicted by many ABB presence observations on the western edge of the stated range; (c) misinterpretation of the findings of Manel et al.; and (d) a lack of attention to sampling scale; the authors don't mention the scale of their model, and don't seem to understand the importance of this factor in the development of distribution models.

(3) Mr. Bell did not properly consider the reservations expressed by C&H regarding the application of their results.

(4) The data used by C&H were not collected randomly across the landscape (as the Complainant alleged in the complaint); this approach violates an assumption of MAXENT models.

Failure to Provide the Benefit of Doubt to the Listed Species: National S7 policy, as discussed on page 1-6 of the Endangered Species Consultation Handbook (FWS and National Marine Fisheries Service 1998), directs the FWS to provide the benefit of the doubt to listed species in cases where gaps or uncertainty exist in the information on which consultations are based. Application of the C&H-derived ABB range map, as adapted by Luke Bell, reduced the previously mapped range of the ABB by about 5 million acres according to a undated briefing paper prepared by Luke Bell (pers. comm.) for the Assistant Regional Director for Ecological Services in Region 2. Areas excluded from the previously relied-upon county-based ABB range map contain suitable habitat for the ABB, some documented detections of the ABB, and much of the area had not been adequately surveyed under appropriate conditions and methodology. Subsequent to the adoption of the new C&H-derived ABB range map by the OKESFO,

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

Final 3/22/13

additional records of ABB presence within the area now excluded from the range map were documented.

Reliance on the C&H-derived ABB range map, as adapted by Luke Bell using the 0.5 probability of occurrence threshold, is at odds with FWS S7 policy as it relates to erring on the side of the species in response to uncertainty in available information. In accordance with S7 policy to err on the side of the listed species in cases of uncertainty, it would be the FWS's customary practice to include areas of suitable habitat as part of the range of the ABB that have less than a 50% probability of ABB occurrence in recognition that the ABB is listed as endangered, which by statutory definition under the ESA means it is in danger of extinction throughout all or a significant portion of its range. Based on the discussion above, the SIRP concludes that Luke Bell and his supervisor, Dr. Porter, committed scientific misconduct: by intentionally choosing a model to derive the new S7 range of the ABB that does not meet the requirements of the FWS's S7 policy for reasonably erring on the side of the species; by failing to appropriately evaluate the model; and by intentionally excluding areas from the new range map that have suitable ABB habitat and positive ABB survey results.

Flawed Peer Review: The peer review process used by Luke Bell to finalize the new ABB range map, based on the C&H paper, does not meet the standards for such review as established by the Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review (2004) and reflected in the Peer Review chapter of the FWS Information Quality Guidelines (revised June 2012). The peer review process used by Mr. Bell was restricted to include only OKESFO staff that had contributed to the map's development and one of the authors (Crawford) of the C&H paper. Although numerous other OKESFO staff working on ABB issues expressed concerns about the proposed new ABB range map based on the C&H paper, Mr. Bell included only one OKESFO staff person that was not working on ABB issues in his list of peer reviewers. While Mr. Bell afforded other Ecological Services offices that work on ABB matters the opportunity to review the new method for development of the ABB range map for Oklahoma, these offices were not part of the peer review process. Mr. Bell did not solicit sufficient modeling expertise, nor did he secure a robust review of the model, its application and the resulting distribution map. Although both Luke Bell and Dixie Porter told the SIRP in interviews that the C&H model-derived ABB range map prepared by Mr. Bell had been peer-reviewed, the process they described does not even minimally meet current peer review standards as referenced above.

SIRP Conclusion: The SIRP concluded that the use of the C&H model-derived ABB range map using the 0.5 probability of presence threshold is not likely to support the mission of the Department and the FWS, and the purposes of the ESA to conserve listed species and the ecosystems upon which they depend. This map should not be used for the ESA S7 compliance process or other similar uses. Based on the above findings, the SIRP found that Luke Bell and Dixie Porter: (1) did not adhere to the DOI Code of Scientific Conduct (sections 3.7.A.1., 3.7.A.3, 3.7.A.4, 3.7.A.6, 3.7.B.5, 3.7.B.6, and C.1); and (2) departed from FWS accepted practices of ES field offices when responding to complex scientific issues, including the exclusion of certain staff members from discussions in which they could make a contribution and by restricting the ability of staff to meet to discuss the scientific issues they faced. Mr. Bell and Dr. Porter

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

[REDACTED] Final 3/22/13

knowingly took these actions to restrict participation by certain staff members. Their actions created an office environment that impedes the free flow of scientific and scholarly information, and compromised the scientific integrity of the range map for the ABB used to inform the ESA S7 compliance process

[REDACTED]

Basis of Findings (Allegations 5-6): The preponderance of evidence provided by interview responses and documents obtained and reviewed by the SIRP supports a finding that:

- (1) Luke Bell denied requests for staff review of the draft justification document for the C&H-based ABB S7 range map, with the exception of requesting input from one staff member (“Staff #1”).

[REDACTED]

[REDACTED] The manner in which the OKESFO is being managed seems to have severely limited opportunities for staff feedback into the application of science on ABB-related matters. The information provided in SIRP interviews with OKESFO staff supports a finding that, at times, Luke Bell would coordinate with individual staff to get input into the justification rationale for the new C&H model-derived ABB range map but the objective seemed to be an affirmation of his analysis rather than the soliciting of any appropriate constructive criticism. If that affirmation didn’t occur, Luke Bell would react negatively. [REDACTED]

[REDACTED]

[REDACTED] there appears to be an office atmosphere of avoiding negative feedback to management on ABB-related matters for fear of being viewed as disrespectful and difficult which might result in the employee being suspended by either Mr. Bell or Dr. Porter.

**FOIA APPEAL DECISION: ALL REDACTIONS FOIA EXEMPTIONS (6) & (7)(C)
(UNLESS OTHERWISE NOTED)**

BSIO Summary Report (ESO-S0000328) of Report on the Scientific Integrity Review Panel inquiry re: scientific misconduct allegations about a new American burying beetle Section 7 map based on a model, and other related matters, Oklahoma, 2012.

[REDACTED] Final 3/22/13

[REDACTED]

[REDACTED]

[REDACTED]

SIRP Conclusion: Based on the above information and the results of other staff interviews conducted by the SIRP during the course of fact-finding, the SIRP found that management of Endangered Species Program staff at the OKESFO by Luke Bell and Dixie Porter has created an office environment that is likely to inhibit the free flow of scientific and scholarly information that is specifically called for under the Department's new scientific integrity policy, and is contrary to the Code of Scientific and Scholarly Conduct set forth in that Policy. Their actions departed from FWS accepted practices of ES field offices when responding to complex scientific issues by excluding certain staff members from discussions in which they could make a contribution and by restricting the ability of staff to meet to discuss the scientific issues they faced. Mr. Bell and Dr. Porter knowingly took these actions to restrict participation by certain staff members. Their actions created an office environment that compromised the scientific integrity of the range map for the ABB used to inform the ESA S7 compliance process. On that basis, the SIRP finds that the actions of Mr. Bell and Dr. Porter create a loss of scientific integrity.

BSIO Conclusion:

The BSIO supports the findings and conclusions of the SIRP as described above. Dr. Porter and Mr. Bell actions, associated with implementing a new Section 7 map for the American burying beetle, based on their adaptation of a published model by Crawford and Hoagland, intentionally circumvented policy that compromised scientific integrity of the endangered species program in Oklahoma, and therefore constitute scientific misconduct. In addition, Dr. Porter and Mr. Bell's intentional supervisory or managerial actions in how they manage the endangered species staff in their office, resulted in a loss of scientific integrity for that program in Oklahoma. [REDACTED]

[REDACTED]

Literature Cited:

Crawford P.H.C., B. W. Hoagland. 2010. Using species distribution models to guide conservation at the state level: the endangered American burying beetle (*Nicrophorus americanus*) in Oklahoma. *J Insect Conservation* 14:511-521.

Manel S, Williams HC, Ormerod SJ. 2001. Evaluating presence-absence models in ecology: the need to account for prevalence. *J Appl Ecol* 38:921-931.

Wilson, K.A., M.I. Westphal, H.P. Possingham, and J. Elith. 2005. Sensitivity of conservation planning to different approaches to using predicted species distribution data. *Biological Conservation* 122:99-112.