

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Subject: Small Renewable Energy Projects (Solar) - Guidance Memo No. REW 2012-01

To: Director, Deputy Directors, Division Directors

From: Carol Wampler, Renewable Energy Policy Manager

Date: July 18, 2012

Copies: Regional Directors, Virginia CZM Manager

Summary: In 2009, the Virginia General Assembly enacted the Small Renewable Energy Projects Act (Chapters 808 and 854) directing DEQ to develop permit by rule (PBR) regulations for the construction and operation of renewable energy projects. The second PBR – for solar projects with rated capacity of 100 megawatts and less – went into effect on July 18, 2012. This Guidance document provides DEQ’s suggestions on how the requirements of 9VAC15-60, the “Small Renewable Energy Project (Solar) Permit by Rule” regulations, may be met. It is written for the benefit of agency staff, permit applicants, and members of the public. Like the statute and implementing regulations, this Guidance document addresses pre-construction natural-resource analyses, mitigation plans, post-construction monitoring, and other PBR requirements and issues. Where appropriate, the Guidance discusses methods of performing the required regulatory tasks.

The renewable energy PBR program is administered by the central office staff listed below. If solar projects require any other permits administered by DEQ, staff members from the relevant permit programs are welcome to contact renewable energy staff with any questions. The 2009 statute requires the applicant to submit in his Solar PBR application a certification that he has “applied for or obtained all necessary environmental permits.” (§10.1-1197.6 B 12 of the Code of Virginia)

Electronic Copy: An electronic copy of this Guidance is available at:

- Section I: <http://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=5001>
- Section II: <http://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=5002>
- Section III: <http://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=5003>

Also, an electronic copy and additional information concerning the Solar PBR are available on DEQ’s website at the [Renewable Energy Program’s Guidance Page](#). Information concerning analysis of avian resources in the Coastal Avian Protection Zones (CAPZ) and the interactive CAPZ map can be found at the [Coastal GEMS webpage](#).

Contact Information: Please contact Carol Wampler at (804) 698-4579 or carol.wampler@deq.virginia.gov with any questions regarding the application of this Guidance.

Disclaimer: This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

Solar Permit by Rule (PBR) GUIDANCE
Department of Environmental Quality (DEQ)
Section I: General

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Executive Summary

This Guidance document provides DEQ's suggestions on how the requirements of 9VAC15-60, the "Small Renewable Energy Project (Solar) Permit by Rule" regulations, may be met. It is written for the benefit of agency staff, permit applicants, and members of the public. It is not a legally-enforceable document but rather an interpretive guide to understanding the Solar Permit by Rule (PBR) regulations.

DEQ was directed to develop the PBR regulations in order to implement the "Small Renewable Energy Projects Act" (the 2009 statute), which was enacted by the Virginia General Assembly in 2009 (2009 Acts of Assembly, Chapters 808 and 854). Like the 2009 statute and implementing regulations, this Guidance document addresses pre-construction natural-resource analyses, mitigation plans, post-construction monitoring, and other PBR requirements and issues. Where appropriate, the Guidance discusses methods of performing the required regulatory tasks.

DISCLAIMER:

This document is provided as Guidance and, as such, sets forth standard operating procedures for the agency. It does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

Electronic Copy:

An electronic copy of this Guidance is available on DEQ's website at http://www.deq.state.va.us/renewable_energy/homepage.html.

Contact Information:

Please contact Carol Wampler (804-698-4579; carol.wampler@deq.virginia.gov) with any questions regarding the application of this Guidance.

General Procedures

Notice of Intent

The statute and the regulations require the applicant to notify DEQ that he intends to submit a PBR application. The regulation further provides that the applicant do so “as early in the project development process as practicable.” Applicants should furnish notice of intent to DEQ as soon as possible, but certainly after the applicant believes that the proposed project can meet local land use requirements. The actual certification of compliance with land use ordinances is not required until the permit application is formally submitted to DEQ. At a fairly early stage of project development, however, the applicant will know whether he has the “go ahead” concerning local requirements, and it should become “practicable” for him to submit the notice of intent to DEQ, as required by the regulation (9 VAC 15-60-30 A 1). DEQ will then submit the notice of intent for publication in the Virginia Register that the applicant intends to submit a permit by rule (PBR) application.

Pre-Application Meetings

Initial Pre-Application Meeting: As indicated in the letter from DEQ’s Director (posted on DEQ’s website under Renewable Energy program information), DEQ recommends that the applicant meet informally with DEQ staff within the early stages of project planning and development to alert DEQ staff to the general size, location, and technologies envisioned for the proposed project, as well as the applicant’s target timeframe for submitting a complete permit-by-rule application to DEQ. It is also recommended that the applicant continue to keep DEQ apprised of major developments.

Subsequent Pre-Application Meetings: The Solar PBR regulation and Guidance provisions are written with a high degree of specificity, as is the general practice with any permit by rule. Procedural questions, however, may still arise. The applicant is encouraged to ask DEQ to convene a pre-application meeting whenever the applicant has any questions about requirements for pre-construction analyses, mitigation, post-construction monitoring, or any other PBR issue. DEQ staff will host these pre-application meetings. DEQ will invite relevant sister agencies to send representatives, where appropriate or if requested by the applicant, to help ensure that applicants receive a coordinated response from the state to their questions.

The applicant may request varying degrees of formality in pre-application meetings. In many instances, a highly informal, oral discussion may occur. Alternatively, an applicant may choose to submit written documents to DEQ and request formal written confirmation of whether the applicant’s proposed actions meet regulatory requirements. An applicant may also request a mixture of informal oral and formal written feedback. When an applicant submits documents and asks for confirmation of regulatory compliance, DEQ will consult with other agencies in the Secretariat of Natural Resources on substantive technical questions, as appropriate, before providing a response to the applicant.

An applicant is at liberty to consult directly with any state agency at any time. DEQ suggests, however, that the PBR applicant submit documents and requests for pre-application and application meetings to DEQ. DEQ will maintain the official record concerning the application and the project, so it is important that DEQ receive all documents. DEQ will disseminate documents to sister agencies, as appropriate. A DEQ-facilitated approach can also help ensure that, if an applicant and a sister agency disagree about compliance with a particular regulatory requirement, there can be an orderly resolution of the issue under DEQ’s regulatory auspices.

Application Submission

Application Meeting: The applicant is encouraged to schedule a meeting with DEQ at the time he submits his formal PBR application for review and decision. DEQ anticipates that representatives of relevant sister agencies would attend. The meeting would provide an opportunity for the applicant to explain any matters he considers relevant concerning his application, and to answer any preliminary questions from the agencies.

Application Requirements: The application should contain all of the information stipulated in the statute (§10.1-1197.5 et seq. of the Code of Virginia) and regulations (9VAC15-60). It is hoped that this Guidance and any pre-application meetings will assist the applicant in preparing and submitting a complete and adequate application.

Agency Decision: As provided in the regulation, DEQ will determine within 90 days whether an application is complete and adequate to meet the requirements for PBR coverage. DEQ alone is responsible for making permit decisions; however, DEQ will consult with other agencies in the Secretariat of Natural Resources before making the permit decision.

Freedom of Information Act (FOIA)

All documents submitted to a state agency – electronically or otherwise – are public documents and subject to Freedom of Information Act (FOIA) requests. This includes documents submitted to DEQ, whether in connection with pre-application meetings, submission of the PBR application, or otherwise. There are, however, certain exemptions to FOIA, including the following:

FOIA Exemption for Sensitive Information (related to Wildlife)

The locations of and specific information regarding caves and certain plant and animal species are considered sensitive and may be exempt from the Virginia Freedom of Information Act (§ 2.2-3705.7. 10 of the Code of Virginia), which provides as follows: “Records containing information on the site specific location of rare, threatened, endangered or otherwise imperiled plant and animal species, natural communities, caves, and significant historic and archaeological sites if, in the opinion of the public body that has the responsibility for such information, disclosure of the information would jeopardize the continued existence or the integrity of the resource. This exemption shall not apply to requests from the owner of the land upon which the resource is located.” (See <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+2.2-3705.7>). The Department of Game and Inland Fisheries (DGIF) and the Department of Conservation and Recreation (DCR) provided the following information in April 2011 regarding the status of these resources under FOIA:

- DGIF deems the species-specific, exact locations of state (or federally) Endangered or Threatened species, excluding bald eagles, to be excluded from the purview of FOIA. DGIF presents exact locations of eagle nests (the center point of a "buffer" circle) on the grounds that public/landowner cooperation can only be gained if people actually know where the nests are.
- DGIF does not consider any locations of habitats or nonlisted Species of Greatest Conservation Need (SGCN) species to be protected under a FOIA exemption. Note,

however, that DGIF classifies hibernacula and maternity and bachelor bat colonies as “wildlife” and not just as habitats.

- Regarding caves, DGIF handles them as "hibernacula" or "maternity or bachelor colonies" (i.e., positive wildlife occurrences) if DGIF knows that they support particular species; however, DGIF defers specific requests for site-specific "cave" data per se, to DCR. DGIF would, for example, produce a project report stating that a given project is or is not within X miles of a cave or hibernaculum, but DGIF would not release the exact location of the cave or hibernaculum; nor would DGIF release site-specific cave data received from the Cave Board or DCR to third parties through licensed data transfers, without concurrence from the source.
- DCR advised that parties may consult with DCR regarding the proper treatment of caves and certain species and habitat questions. DCR noted that information related to the location of caves, and certain plant and animal species as determined by consultation with DGIF and DCR, that is prepared for a PBR application, including any mitigation plans containing location-specific information on caves or species as determined above, should not be released to the general public and should be submitted to DEQ as an appendix to the application and labeled “Sensitive Information – Not For Public Dissemination.”

FOIA Exemption for Sensitive Information (related to Historic Resources)

The locations of and specific information regarding archaeological sites are considered sensitive and may be exempt from the Virginia Freedom of Information Act (see http://www.dhr.virginia.gov/pdf_files/FOIAPolicyDHR.pdf). The archaeological studies prepared for a PBR application, including any surveys or mitigation plans containing specific information on archaeological sites, should not be released to the general public and should be submitted to DEQ as an appendix to the application and labeled “Sensitive Information – Not For Public Dissemination.”

FOIA Exemption for Sensitive Information (related to Proprietary Business Issues)

If an applicant believes that information he is preparing for a PBR application is eligible for a FOIA exemption as proprietary business information or trade secret, then the applicant should provide DEQ with the legal and factual basis for his belief. It is recommended that the applicant discuss this issue with DEQ during informal pre-application meetings, so that a decision about FOIA requirements may be reached before the applicant submits documents. Where an exemption from FOIA requirements is deemed appropriate by DEQ, the applicant may submit the proprietary information to DEQ as an appendix to the application and labeled “Sensitive Information – Not For Public Dissemination.”

Jurisdictional Issues

In accordance with the 2009 statute, DEQ has jurisdiction to approve PBR applications for solar projects with a rated capacity of 100 megawatts and less. Even though the regulations provide few, if any, substantive requirements for projects with rated capacity of five megawatts and less (or for projects meeting other specified criteria – see Section 130 of the regulation and Guidance), such projects are still deemed to be covered by the PBR regulation. For projects with a rated capacity over 100 megawatts, the State Corporation Commission (SCC) retains jurisdiction to address wildlife and historic resources issues, just as it did prior to enactment of the 2009 statute.

Within Section II (Methodology) of this Guidance, several other jurisdictional issues are discussed. These issues are also highlighted here, as follows:

There are 14 application criteria set forth in the 2009 statute. These criteria are repeated in the Solar PBR regulation and referenced in Section II of the Solar PBR Guidance. Consistent with both formal and informal advice from the Office of the Attorney General, however, DEQ will not automatically view these 14 criteria as being jurisdictional. In other words, if one or more of the 14 criteria are not applicable and therefore not achievable, DEQ will still have jurisdiction over the project and may approve PBR coverage if all the other *relevant* criteria are met.

For example, the statute and regulations require the applicant to submit interconnection studies and the final interconnection agreement (criteria #3 and #4). Particularly in the context of solar and combustion projects, Regulatory Advisory Panel (RAP) members discussed the possibility that not all projects will interconnect. The RAP's utilized the commonly-understood meaning of "interconnect" to connote that the project sells electricity back to the grid at wholesale. In informal advice to the Department, the Office of the Attorney General (OAG) indicated that, if the project does not interconnect and therefore cannot meet the interconnection criteria, then DEQ may still approve PBR coverage if the application indicates compliance with all the other relevant criteria. This advice is consistent with a formal Opinion of the Attorney General on the criterion of local-government certification of land use compliance for wind projects located on state-owned subaqueous bottoms, where no local government has jurisdiction & therefore an applicant cannot meet the criterion. Further, the OAG noted that it appears clear from the SCC's statutory authority and course of dealing that the SCC has authority over renewable energy projects whether they interconnect or not. Since the General Assembly transferred the subject-matter authority underlying DEQ's 2009 statute from the SCC to DEQ, it would be logical for DEQ to have equivalent jurisdiction to the SCC's. Consequently, DEQ believes it has jurisdiction over solar projects with rated capacity of 100 megawatts and less, whether or not the projects interconnect to the grid.

Federal and Other Requirements

The Solar PBR regulation and Guidance address the requirements set forth in the 2009 state statute and do not reference federal requirements. To the extent that federal requirements exist, however, an applicant will need to comply with these federal requirements.

The 2009 statute does include provisions relating to local government requirements, as well as to other necessary (state) permits. Pursuant to these provisions, applicants must submit evidence of compliance with these local and state requirements in order to receive PBR coverage.

This PBR regulation does not excuse an applicant from complying with all relevant local, state, and federal requirements.

Solar Permit by Rule (PBR) GUIDANCE
Department of Environmental Quality (DEQ)
Section II: Methodology

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<p>NOTES: In addition to the general provisions found in Section I (General) of this Guidance, the applicant should follow the specific Methodology suggested in Section II, as provided in the right-hand columns below.</p> <p>For purposes of brevity, only regulatory sections that have Guidance associated with them are set forth within the left-hand column of this table. The prefix “9 VAC15-60” should be assumed to precede each subsection number (e.g., 9 VAC 15-60-10, 9 VAC 15-60-20). A full copy of the Solar PBR regulation can be found at http://lis.virginia.gov/000/reg/TOC09015.HTM#C0040 and at http://www.deq.virginia.gov/Programs/RenewableEnergy/LawsRegulationsGuidance.aspx. Applicants should read this regulation in its entirety in conjunction with this Guidance document, since applicants are responsible for complying with all regulatory provisions.</p> <p>DISCLAIMER: This document is provided as Guidance and, as such, sets forth standard operating procedures for the agency. It does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.</p>	
<p>9 VAC 15-60-</p>	
<p>10. Definitions.</p>	
<p>20. Authority and Applicability</p>	
<p>30. Application</p> <p>A. Requirements</p> <p>The owner or operator of a small solar energy project with a rated capacity greater than five megawatts and a disturbance zone greater than 10 acres, provided that the project does not otherwise meet the criteria for Part III (9VAC15-60-130 A or B) of this chapter, shall submit to the department a complete application in which he satisfactorily accomplishes all of the following:</p>	<p><i>This section lists the 15 basic application requirements as set forth in the 2009 statute and as amended in 2017. If a particular requirement warrants detailed explanation, then that explanation is set forth either in this Guidance document, in a subsequent section of the regulation, or in both. For example, the Analyses, Determination of Significant Adverse Impact, and Mitigation requirements in subparagraphs 7 and 8 of this section are spelled out in three subsequent regulatory sections.</i></p>

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<p>1. In accordance with § 10.1-1197.6 B 1 of the Code of Virginia, and as early in the project development process as practicable, furnishes to the department a notice of intent, to be published in the Virginia Register, that he intends to submit the necessary documentation for a permit by rule for a small renewable energy project;</p>	<p><i>Applicants should furnish this notice of intent (NOI) to DEQ as soon as possible, but certainly after the applicant believes that the proposed project can meet local land use requirements (that is, that the proposed project appears capable of meeting the requirements for a special use permit or other locally-designated permission, and not that the project has necessarily been granted a special use permit, etc.). Once a NOI has been received by DEQ, the applicant can access the expertise from the sister agencies that will be involved in the review of the application, i.e., Department of Historic Resources (DHR), the Department of Game and Inland Fisheries (DGIF) and the Department of Conservation and Recreation (DCR).</i></p> <p><i>Please refer to the attached Sample Notice of Intent (Full PBR Projects) when drafting the Notice of Intent. The agency prefers that this notice be transmitted by electronic mail to mary.major@deq.virginia.gov.</i></p> <p><i>A copy of the NOI (including date originally submitted) should be included in the final application package.</i></p>
<p>2. In accordance with § 10.1-1197.6 B 2 of the Code of Virginia, furnishes to the department a certification by the governing body of the locality or localities wherein the small renewable energy project will be located that the project complies with all applicable land use ordinances;</p>	<p><i>The local government certification should either be a letter on official letterhead stationery from a responsible official of the local government (e.g., county administrator or his designee) or the Local Governing Body Certification Form attached to this Guidance. If the local governing body prefers to write the letter on official letterhead stationery, the letter should state that the proposed project (identified by the name of the applicant, the proposed location including project coordinates, and other relevant information) complies with all applicable land use ordinances.</i></p>
<p>3. Interconnection studies. 4. Final interconnection agreement</p>	<p><i>Interconnection: If a project does not interconnect to the electric grid (i.e., it does not sell electricity at wholesale back to the grid), then the applicant will not be able to comply with criteria 3 and 4. Based on informal advice from the Office of the Attorney General (OAG), however,</i></p>

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	<i>DEQ still has jurisdiction to consider and approve PBR coverage for such projects. (See Section I -General of this Guidance document for further information.)</i>
5. Certification regarding project's maximum generation capacity.	<i>Project cannot exceed 150MW.</i>
6. In accordance with § 10.1-1197.6 B 6 of the Code of Virginia, furnishes to the department an analysis of potential environmental impacts of the small renewable energy project's operations on attainment of national ambient air quality standards;	<i>The applicant may fulfill the requirements of subparagraph 6 by submitting a statement that the proposed project's operations will create no significant negative impacts on the attainment of NAAQS and by providing an analysis projected amounts of pollutants avoided on an annual basis.</i>
7. In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department, where relevant, an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC15-60-40. For wildlife, that analysis shall be based on information on the presence, activity, and migratory behavior of wildlife to be collected at the site for a period of time dictated by the site conditions and biology of the wildlife being studied, not exceeding 12 months;	
8. In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, furnishes to the department a mitigation plan pursuant to 9VAC15-60-60 that details reasonable actions to be taken by the owner or operator to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions;	<i><u>See</u>, Guidance to subsections 50 & 60 below.</i>

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<p>provided, however, that the provisions of this subdivision shall only be required if the department determines, pursuant to 9VAC15-60-50, that the information collected pursuant to § 10.1-1197.6 B 7 of the Code of Virginia and 9VAC15-60-40 indicates that significant adverse impacts to wildlife or historic resources are likely. The mitigation plan shall be an addendum to the operating plan of the solar energy project and the owner or operator shall implement the mitigation plan as deemed complete and adequate by the department. The mitigation plan shall be an enforceable part of the permit by rule;</p>	
<p>9. Certification regarding project design.</p>	
<p>10. Operating plan.</p>	<p><i>The operating plan should include an explanation of how the facility will operate post construction including contact information should a problem arise at the facility..</i></p>
<p>11. Site plan.</p>	
<p>12. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small solar energy project has applied for or obtained all necessary environmental permits;</p>	<p><i>The applicant’s environmental permit certification letter should state which environmental permits are necessary for the proposed project (or local stormwater permit if the locality has such jurisdiction) and the status of the applicant’s application for each (“applied for” or “obtained”). If no environmental permits are necessary for the proposed project, then the applicant should so state in his certification letter. A suggested format for the applicant’s environmental permit certification appears as an attachment to this Guidance.</i></p>

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	<p><u>“Applied for”</u></p> <p><i>For purposes of this regulation, the term “<u>applied for</u>” all necessary environmental permits means that the applicant has submitted an application to the receiving agency for each necessary environmental permit. The applicant should certify that he has “applied for” each permit by providing to DEQ the name of the permit, name and address of the receiving agency, name of the staff person at the receiving agency to whom the application was addressed (if available), and the date on which the application was submitted.</i></p> <p><u>“Obtained”</u></p> <p><i>If the applicant has “<u>obtained</u>” the necessary environmental permits by the time he submits his PBR application, then he may either append copies of these permits or append a letter on agency stationery from the appropriate agency staff member that the permit(s) has been issued and the date of issuance/approval.</i></p>
<p>13. In accordance with § 10.1-1197.6 H and I of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small solar energy project is being proposed, developed, constructed, or purchased by a person that is not a utility regulated pursuant to Title 56 of the Code of Virginia or provides certification that (i) the project’s costs are not recovered from Virginia jurisdictional customers under base rates, a fuel factor charge, or a rate adjustment clause or (ii) the applicant is a utility aggregation cooperative formed under Article 2 (§ 56-231.38 et seq.) of Chapter 9.1 of Title 56 of the Code of Virginia.</p>	<p><i>The applicant should certify that he is not a utility regulated under Title 56 of the Code of Virginia by submitting the non-utility Certification Form provided below.</i></p> <p><i>If the applicant is a utility, then he should submit the Utility Certification Form and must certify, by checking the appropriate box, that the project’s costs are not recovered from Virginia customers under base rates, a fuel factor charge or a rate adjustment clause OR the utility is a cooperative.</i></p>
<p>14. In accordance with § 10.1-1197.6 B 13 and 14 of the Code of Virginia, conducts a 30-day public review</p>	<p><i>It is the responsibility of the applicant to conduct both the public meeting and the 30-day public review and comment period. All the materials that</i></p>

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<p>and comment period and holds a public meeting pursuant to 9VAC15-60-90. The public meeting shall be held in the locality or, if the project is located in more than one locality, in a place proximate to the location of the proposed project. Following the public meeting and public comment period, the applicant shall prepare a report summarizing the issues raised by the public and include any written comments received and the applicant's response to those comments. The report shall be provided to the department as part of this application; and</p>	<p><i>are intended to be submitted in the PBR application must be available during this comment period, except for the summary report of the comment period and permit fee. This public comment is separate from any public meetings conducted to receive local approval - any previous public meetings will not substitute for this public comment period.</i></p>
<p>15. In accordance with 9VAC15-40-110, furnishes to the department the appropriate fee.</p> <p>B. Agency Determination</p>	<p><i>See 9VAC15-60-110 and Guidance for Section 110 below for details regarding fees.</i></p>
<p>40. Analysis</p> <p>A. Wildlife</p> <p>To fulfill the requirements of §10.1-1197.6 B 7 of the Code of Virginia, the applicant shall conduct pre-construction wildlife analyses. The analyses of wildlife shall include the following:</p>	<p><i>The general approach is for the applicant to perform <u>desktop studies</u> of the project area. If the desktop studies indicate the presence of relevant wildlife as specified in the regulation or this Guidance, then the applicant will proceed to perform <u>mitigation</u> (as set forth in 9VAC15-60-50 and 9VAC15-60-60). Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the</i></p>

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	<p><i>proposed project on relevant wildlife.</i></p> <p>Shelf life:</p> <p><i>This list provides a general guideline for how long a negative survey (a survey where <u>no</u> STATE-listed species was found) remains valid.</i></p> <table border="0"> <thead> <tr> <th data-bbox="989 516 1423 548"><u>Taxon/Species</u></th> <th data-bbox="1430 516 1843 548"><u># of years negative survey valid</u></th> </tr> </thead> <tbody> <tr> <td colspan="2"><u>Mammals</u></td> </tr> <tr> <td><i>All listed bats</i></td> <td><i>3 years</i></td> </tr> <tr> <td><i>Other listed mammals</i></td> <td><i>2 years</i></td> </tr> <tr> <td colspan="2"><u>Birds</u></td> </tr> <tr> <td><i>Gull-billed tern (Sterna nilotica)</i></td> <td><i>1 years</i></td> </tr> <tr> <td><i>Peregrine falcon (Falco peregrinus)</i></td> <td><i>1 years</i></td> </tr> <tr> <td><i>Wilson's plover (Charadrius wilsonia)</i></td> <td><i>1 years</i></td> </tr> <tr> <td><i>Bald eagle (Haliaeetus leucocephalus)</i></td> <td><i>1 years</i></td> </tr> <tr> <td><i>Other listed birds</i></td> <td><i>2 years</i></td> </tr> <tr> <td colspan="2"><u>Fish</u></td> </tr> <tr> <td><i>All listed fish</i></td> <td><i>2 years</i></td> </tr> <tr> <td colspan="2"><u>Amphibians</u></td> </tr> <tr> <td><i>All listed amphibians</i></td> <td><i>2 years</i></td> </tr> <tr> <td colspan="2"><u>Reptiles</u></td> </tr> <tr> <td><i>All listed reptiles</i></td> <td><i>2 years</i></td> </tr> <tr> <td><u><i>All listed isopods and amphipods</i></u></td> <td><i>3 years</i></td> </tr> <tr> <td><u><i>All listed mollusks</i></u></td> <td><i>2 years</i></td> </tr> <tr> <td><u><i>All other listed invertebrates</i></u></td> <td><i>2 years</i></td> </tr> <tr> <td colspan="2">-----</td> </tr> </tbody> </table>	<u>Taxon/Species</u>	<u># of years negative survey valid</u>	<u>Mammals</u>		<i>All listed bats</i>	<i>3 years</i>	<i>Other listed mammals</i>	<i>2 years</i>	<u>Birds</u>		<i>Gull-billed tern (Sterna nilotica)</i>	<i>1 years</i>	<i>Peregrine falcon (Falco peregrinus)</i>	<i>1 years</i>	<i>Wilson's plover (Charadrius wilsonia)</i>	<i>1 years</i>	<i>Bald eagle (Haliaeetus leucocephalus)</i>	<i>1 years</i>	<i>Other listed birds</i>	<i>2 years</i>	<u>Fish</u>		<i>All listed fish</i>	<i>2 years</i>	<u>Amphibians</u>		<i>All listed amphibians</i>	<i>2 years</i>	<u>Reptiles</u>		<i>All listed reptiles</i>	<i>2 years</i>	<u><i>All listed isopods and amphipods</i></u>	<i>3 years</i>	<u><i>All listed mollusks</i></u>	<i>2 years</i>	<u><i>All other listed invertebrates</i></u>	<i>2 years</i>	-----	
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	<p><i>Prepared by DGIF; last updated: November 19, 2010</i></p> <p><i>Sensitive Information (wildlife) and FOIA</i></p> <p><i>It is important to note that the locations of and specific information regarding caves and certain plant and animal species are considered sensitive and may be exempt from the Virginia Freedom of Information Act. <u>See</u> Section I of this Guidance.</i></p>
<p>1. Desktop surveys and maps. The applicant shall obtain a wildlife report and map generated from DGIF's Virginia Fish and Wildlife Information Service web-based application (9VAC15-60-120 C 3) or from a data and mapping system including the most recent data available from DGIF's subscriber-based Wildlife Environmental Review Map Service of the following: (i) known wildlife species and habitat features on the site or within two miles of the boundary of the site and (ii) known or potential sea turtle nesting beaches located within one-half mile of the disturbance zone.</p>	<p><i>Desktop Surveys and Maps</i></p> <p><i>The applicant should provide a report, including a map, of the desktop and field surveys conducted to determine the existence or potential existence of wildlife. The applicant should obtain a list of wildlife from DGIF and DCR for the proposed site and attach it to the application. The report should provide relevant, available details of any wildlife found onsite, including species, detection location(s), age, size, spatial distribution, and evidence of reproduction.</i></p>
<p>2. Desktop map for avian resources in Coastal Avian Protection Zones (CAPZ). The applicant shall consult the "Coastal Avian Protection Zones" map generated on the department's Coastal GEMS geospatial data system (9VAC15-60-120 C 1) and determine whether the proposed solar energy project site will be located in part or in whole within one or more CAPZ.</p>	<p><i>If a proposed project will be located anywhere near a coastal area, the applicant should consult Coastal GEMS to determine whether the project site fall in part or in whole within one or more CAPZ. <u>See</u> Section III – CAPZ Narrative – of this Guidance document for specific instructions.</i></p>
<p>B. Historic Resources</p> <p>Analyses of historic resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction historic resources</p>	<p><i>These regulations require that a DOI-qualified consultant perform the specified historic resources analyses, in conformance with DHR's guidelines. The general approach is for the applicant/DOI-qualified</i></p>

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<p>analysis. The analysis shall be conducted by a qualified professional meeting the professional qualification standards of the Secretary of the Interior's Standards for Archeology and Historic Preservation (9VAC15-60-120 B 2) in the appropriate discipline. The analysis shall include each of the following:</p>	<p><i>person to perform analyses within tiered study areas, including desktop and field investigations. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the proposed project on relevant historic resources.</i></p> <p>Sensitive Information (historic resources) and FOIA</p> <p><i>It is important to note that the locations of and specific information regarding archaeological sites are considered sensitive and may be exempt from the Virginia Freedom of Information Act (see http://www.dhr.virginia.gov/pdf_files/FOIAPolicyDHR.pdf and Section I of this Guidance).</i></p>
<p>1. Compilation of known historic resources. The applicant shall gather information on known historic resources within the disturbance zone and within one-half mile of the disturbance zone boundary and present this information on the context map referenced in 9VAC15-60-70 B, or as an overlay to this context map, as well as in tabular format.</p>	<p>Compilation of Known Historic Resources</p> <p><i>The Archives at the Department of Historic Resources serve as the primary repository of data on known historic resources. These data may be obtained in person at DHR's main office at 2801 Kensington Avenue, Richmond, VA, through DHR's subscription-based Data Sharing System, or by request through DHR's fee-based Archives Search Service. More information can be found on DHR's website at http://www.dhr.virginia.gov/archives/archiv_info.htm. Secondary data repositories that should be checked include local planning offices and historical societies.</i></p> <p><i>Areas and properties that can be demonstrated through topographic or similar analyses to have no view to the project can be excluded from this study.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section should be current within one year of the submission date.</i></p>
<p>2. Architectural survey. The applicant shall conduct a field survey of all architectural resources, including cultural landscapes, 50 years of age or older within the</p>	<p>Architectural Survey</p>

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<p>disturbance zone and within one-half mile of the disturbance zone boundary and evaluate the eligibility of any identified resource for listing in the VLR.</p>	<p><i>All studies should be completed in accordance with the appropriate DHR guidelines for conducting cultural resource surveys. See GUIDELINES FOR CONDUCTING HISTORIC RESOURCES SURVEY IN VIRGINIA (October 2011), which can be found at http://www.dhr.virginia.gov/pdf_files/Survey%20Manual-RevOct.2011Final.pdf. Areas and properties that can be demonstrated through topographic or similar analyses to have no view to the project can be excluded from this study.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section should be current within seven years of the submission date.</i></p>
<p>3. Archaeological survey. The applicant shall conduct an archaeological field survey of the disturbance zone and evaluate the eligibility of any identified archaeological site for listing in the VLR. As an alternative to performing this archaeological survey, the applicant may make a demonstration to the department that the project will utilize nonpenetrating footings technology and that any necessary grading of the site prior to construction does not have the potential to adversely impact any archaeological resource.</p>	<p>Archaeological Survey</p> <p><i>All studies should be completed in accordance with the applicable DHR guidelines for conducting archaeological investigations. See GUIDELINES FOR CONDUCTING HISTORIC RESOURCES SURVEY IN VIRGINIA (October 2011), which can be found at http://www.dhr.virginia.gov/pdf_files/Survey%20Manual-RevOct.2011Final.pdf.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section may be gathered at any time prior to submission.</i></p>
<p>C. Other Natural Resources</p> <p>Analyses of other natural resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction desktop survey of natural heritage resources within the disturbance zone.</p>	<p>Natural Heritage Resources</p> <p><i>The definition of “natural heritage resources” is pursuant to §10.1-209 of the Code of Virginia. Current lists of natural heritage resources can be found on DCR’s web site at http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml#lists.</i></p> <p><i>Ecological Community Group definitions and descriptions, along with methods, can be found on the Department of Conservation and Recreation’s website at:</i></p>

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	<p>http://www.dcr.virginia.gov/natural_heritage/nchome.shtml.</p> <p>A list of natural heritage resource animal and plant species can be found at https://vanhde.org.</p> <p>For desktop surveys, natural heritage resource and state threatened and endangered species information can be found by contacting the Department of Conservation and Recreation, Natural Heritage Program at 804-371-2708, or directly on-line at Natural Heritage Data Explorer https://vanhde.org via a data subscription agreement: http://www.dcr.virginia.gov/forms/DCR199-005.pdf.</p> <p>A list of invasive plant species is found at http://www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf.</p> <p>For natural heritage resources, the applicant is encouraged to take all reasonable measures to avoid adverse impacts. Where impacts are identified, the applicant is encouraged to take action to mitigate or reduce such impacts or to explain why such impacts could not be avoided. Where appropriate, DEQ may approve mitigation of likely significant adverse impacts on natural heritage resources as part of a required wildlife mitigation plan.</p>
<p>D. Summary report.</p> <p>The applicant shall provide to the department a report presenting the findings of the studies and analyses conducted pursuant to subsections A, B, and C of this section, along with all data and supporting documents. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on wildlife and historic resources identified by these studies and analyses.</p>	

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<p>50. Determination of Likely Significant Adverse Impact</p> <p>A. Wildlife</p> <p>The department shall find that significant adverse impacts to wildlife are likely whenever the wildlife analyses prescribed in 9VAC15-60-40 A document that any of the following conditions exists:</p> <ol style="list-style-type: none"> 1. State-listed T&E wildlife are found to occur within the disturbance zone or the disturbance zone is located on or within one-half mile of a known or potential sea turtle nesting beach. 2. The disturbance zone is located in part or in whole within zones 1, 2, 3, 4, 5, 10, 11, 12, or 14 on the Coastal Avian Protection Zones (CAPZ) map. 	
<p>B. Historic Resources</p> <p>The department shall find that significant adverse impacts to historic resources are likely whenever the historic resources analyses prescribed by 9VAC15-60-40 B indicate that the proposed project is likely to diminish significantly any aspect of a historic resource's integrity.</p>	<p><i>Significant adverse impacts are such that the project will alter, directly or indirectly, any of the characteristics of an historic resource in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Definitions of these aspects of integrity can be found at 17 VAC 5-30-50.</i></p>
<p>60. Mitigation plan.</p> <p>A. Adverse Impact</p> <p>If the department determines that significant adverse impacts to wildlife or historic resources or both are likely, then the applicant shall prepare a mitigation plan.</p>	

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<p>B. Wildlife</p> <p>Mitigation measures for significant adverse impacts to wildlife shall include:</p> <ol style="list-style-type: none"> 1. For state-listed T&E wildlife, the applicant shall take all reasonable measures to avoid significant adverse impacts or shall demonstrate in the mitigation plan what significant adverse impacts cannot practicably be avoided and why additional proposed actions are reasonable. These additional proposed actions may include best practices to avoid, minimize, or offset adverse impacts to resources analyzed pursuant to 9VAC15-60-40 A or C. 	<p><i>This regulation does not mandate a mitigation plan for impacts to SGCN or to natural heritage resources. The applicant is required, however, to perform pre-construction surveys and analyses for both (see 9VAC15-60-40 A & C). This provision makes clear that the applicant may voluntarily opt to propose best practices to mitigate for Tier 1 & 2 SGCN, natural heritage resources, or any other resource analyzed pursuant to 9VAC15-60-40 A or C, when he cannot fully avoid impacts to T&E species <u>per se</u>.</i></p>
<ol style="list-style-type: none"> 2. For proposed projects where the disturbance zone is located on or within one-half mile of a known or potential sea turtle nesting beach, the applicant shall take all reasonable measures to avoid significant adverse impacts or shall demonstrate in the mitigation plan what significant adverse impacts cannot practicably be avoided, and why additional proposed mitigation actions are reasonable. Mitigation measures shall include the following: <ol style="list-style-type: none"> a. Avoiding construction within likely sea turtle crawl or nesting habitats during the turtle nesting and hatching season (May 20 through October 31). If avoiding construction during this period is not possible, then conducting daily crawl surveys of the disturbance zone (May 20 through August 31) and one mile beyond the northern and 	

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<p>southern reaches of the disturbance zone (hereinafter "sea turtle nest survey zone") between sunrise and 9 a.m. by qualified individuals who have the ability to distinguish accurately between nesting and nonnesting emergences.</p> <p>b. If construction is scheduled during the nesting season, then including measures to protect nests and hatchlings found within the sea turtle nest survey zone.</p> <p>c. Minimizing nighttime construction during the nesting season and designing project lighting during the construction and operational phases to minimize impacts on nesting sea turtles and hatchlings.</p>	
<p>3. For projects located in part or in whole within zones 1, 2, 3, 4, 5, 10, 11, 12, or 14 on the Coastal Avian Protection Zones (CAPZ) map, contribute \$1,000.00 per megawatt of rated capacity, or partial megawatt thereof, to a fund designated by the department in support of scientific research investigating the impacts of projects in CAPZ on avian resources.</p>	<p><i>CAPZ Avian Mitigation Measures</i></p> <p><i>See Section III – CAPZ Narrative – of this Guidance document for details.</i></p> <p><i>Payment of contributions toward research should be addressed as follows:</i></p> <p><i>Department of Environmental Quality</i></p> <p><i>Receipts Control</i></p> <p><i>P. O. Box 1104</i></p> <p><i>Richmond, Virginia 23218</i></p>
<p>C. Historic Resources</p>	

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<p>Mitigation measures for significant adverse impacts to historic resources shall include:</p> <ol style="list-style-type: none"> 1. Significant adverse impacts to VLR-eligible or VLR-listed architectural resources shall be minimized, to the extent practicable, through design of the solar energy project or the installation of vegetative or other screening. 	<p><i>If the owner of the affected historic property agrees to screening, a landscape plan should be prepared and submitted to DEQ. This plan should include a graphic representation of the effectiveness of the screening. The applicant should implement the approved landscape plan and accept responsibility for the survival of any plantings for two years after planting. Documentation of the completion and assessment of the efficacy of the screening should be submitted to DEQ. The two-year responsibility window will begin from the date of receipt of documentation.</i></p>
<ol style="list-style-type: none"> 2. If significant adverse impacts to VLR-eligible or VLR-listed architectural resources cannot be avoided or minimized such that impacts are no longer significantly adverse, then the applicant shall develop a reasonable and proportionate mitigation plan that offsets the significantly adverse impacts and has a demonstrable public benefit and benefit for the affected or similar resource. 	<p><i>A schedule for mitigation implementation should be included in the application.</i></p>
<ol style="list-style-type: none"> 3. If any identified VLR-eligible or VLR-listed archaeological site cannot be avoided or minimized to such a degree as to avoid a significant adverse impact, significant adverse impacts of the project will be mitigated through archaeological data recovery. 	<p><i>Any necessary data recovery plan should include: (a) the property, properties, or portions of properties where site specific data recovery plans will be carried out; (b) the portion(s) of the site to be preserved in place, if any, as well as the measures to be taken to ensure continued preservation; (c) research questions to be addressed through data recovery with an explanation of their relevance and importance; (d) methods to be used with an explanation of their relevance to the</i></p>

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	<p><i>research questions; (e) methods to be used in analysis, data management, and dissemination of data, including a schedule; (f) proposed disposition of recovered materials and records; (g) proposed methods of disseminating the results of the work to the interested public; and (h) a schedule for the submission of progress reports to DEQ.</i></p>
<p>70. Site Plan and Context Map.</p>	<p><i>Site Plan: It is recommended that the site plan include the following:</i></p> <ol style="list-style-type: none"> <i>1. Property lines and setback lines.</i> <i>2. Existing and proposed buildings and structures, including preliminary location(s) of the proposed solar equipment.</i> <i>3. Existing and proposed access roads, drives, turnout locations, and parking.</i> <i>4. Location of substations, electrical cabling from the solar systems to the substations, ancillary equipment, buildings, and structures (including those within any applicable setbacks), if applicable.</i> <p><i>Applicants are required to submit an as-built map post-construction.</i></p>
<p>80. Design Standards. 90. Public participation.</p>	
<p>100. Change of Ownership, Modifications, Termination.</p>	<p><i>Applicants should note the notification requirements under 9VA15-100 if <u>control of a project</u> is sold or transferred to an entity different than the original applicant, <u>even if the name of the project does not change</u>. Enforcement actions, if required, could be brought against the owner/operator listed in PBR as well as the new entity for operating without a permit.</i></p>

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<p>110. Fees.</p>	<p><i>See regulatory text for details regarding fees. At this time projects over 100MW but less than or equal to 150MW will pay the same fee as project greater than 75MW and less than or equal to 100 MW.</i></p> <p><i>Note Regarding Fees: The correct address to which payments should be addressed is</i></p> <p><i>Department of Environmental Quality</i></p> <p><i>Receipts Control</i></p> <p><i>P. O. Box 1104</i></p> <p><i>Richmond, Virginia 23218</i></p> <p><i>Applicants should check with DEQ Renewable Energy staff regarding the appropriate project/fund coding that should be entered on their check to ensure proper crediting of payments.</i></p>
<p>120. Internet Resources.</p> <p>1. Coastal GEMS application, 2010, Virginia Department of Environmental Quality. Available at the following Internet address:</p> <p>http://www.deq.virginia.gov/coastal/coastalgems.html.</p> <p>NOTE: This website is maintained by the department. Assistance and information may be obtained by contacting Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia 23219, (804) 698-4000.</p>	<p><i>The Coastal GEMS website has been changed. Please click the following to access: Coastal GEMS Website.</i></p>

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<p>130. Smaller Projects.</p> <p>Small solar energy projects less than or equal to five megawatts or less than or equal to 10 acres or meeting certain categorical criteria.</p> <p>A. Less than 500 kW</p> <p>The owner or operator of a small solar energy project is not required to submit any notification or certification to the department if he meets at least one of the following criteria:</p> <ol style="list-style-type: none"> 1. The small solar energy project has either a rated capacity equal to or less than 500 kilowatts or a disturbance zone equal to or less than two acres; or 2. The small solar project falls within at least one of the following categories, without regard to the rated capacity or the disturbance zone of the project: <ol style="list-style-type: none"> a. The small solar energy project is mounted on a single-family or duplex private residence. b. The small solar energy project is mounted on one or more buildings less than 50 years old or, if 50 years of age or older, have been evaluated and determined by DHR within the preceding seven (7) years to be not VLR-eligible. c. The small solar energy project is mounted over one or more existing parking lots, existing roads, or other previously disturbed areas and 	<p><i>Projects that qualify under Section 130 are sometimes referred to as “de minimis” projects, because they generally have little impact on natural resources. They are deemed to be covered by the Solar PBR, but the regulatory requirements are significantly less than those for projects that are greater than 5 MW which are covered by Section 30 et seq.</i></p> <p><i><u>No</u> notice to DEQ and <u>no</u> local government certification of compliance with land use ordinances are required for projects described in subsection A (1 and 2). Although these projects are deemed to be covered by the Solar PBR, they are exempt from notification and from substantive requirements. Projects in this subsection include those having a rated capacity less than or equal to 500 kW, having a disturbance zone less than or equal to 2 acres, or meeting at least one of the specified categorical exemptions in A. 2. (e.g., mounted on a residence, over an existing parking lot).</i></p>

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<p>any impacts to undisturbed areas do not exceed an additional two (2) acres.</p> <p>d. The small solar energy project utilizes integrated PV only, provided that the building or structure on which the integrated PV materials are used is less than 50 years old or, if 50 years of age or older, has been evaluated and determined by DHR within the preceding seven (7) years to be not VLR-eligible.</p>	
<p>B. Between 500kW and 5MW</p> <p>The owner or operator of a small solar energy project with either a rated capacity greater than 500 kilowatts and less than or equal to five megawatts or a disturbance zone greater than two acres and less than or equal to 10 acres shall notify the department and shall submit a certification by the governing body of the locality or localities wherein the project will be located that the project complies with all applicable land use ordinances.</p>	<p><i>Both notice to DEQ and submission to DEQ of local government certification of compliance with land use ordinances are required for projects either greater than 500 kW up to or equal to 5 MW in rated capacity <u>or</u> disturbance zone greater than 2 acres to less than or equal to 10 acres.</i></p> <p><i>For notice to DEQ, please refer to the attached Sample Notice of Intent (Section 130 Projects). The agency's preference is that this notification be provided by electronic mail to mary.major@deq.virginia.gov.</i></p> <p><i>For local government certification, please use the attached Local Government Certification form, which may also be submitted by electronic mail to mary.major@deq.virginia.gov.</i></p> <p><i>Applicants are urged to confer with DGIF staff, especially with regard to compliance with the Virginia Endangered Species Act, if T&E species are found to occur within the disturbance zone or the disturbance zone is located on or within ½ mile of a known or potential sea turtle nesting beach.</i></p>

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<p>140. Enforcement.</p>	<p><i>Applicants need to supply the as-built post construction map of the project as required under 9VAC15-60-70. Applicants should supply any other mitigation documentation post construction if required including documentation for landscape screening plans.</i></p> <p><i>NOTE: All commitments submitted within the application documents become enforceable actions.</i></p>

(Notice of Intent for Solar Energy Project—“de minimis” Section 130 projects)

COMPANY LETTERHEAD

[Date]

Ms. Mary E. Major
Renewable Energy Program
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218
mary.major@deq.virginia.gov

Dear Ms. Major:

On behalf of **[company/applicant]**, I am hereby providing notice to the Department of Environmental Quality of our intention to construct a small renewable energy project (solar) in **[city/county]**, Virginia, pursuant to Virginia Regulation 9VAC15-60-130.B. This project will be subject to provision 9VAC15-60-130.B because the rated capacity of the project will be **[a number equaling 5 megawatts or less]**.

[Applicant should provide a brief description of the proposed project and its location, including the approximate dimensions of the site, approximate number of solar panels, and other key characteristics.]

Attached to this letter, please find a certification by **[governing body of the locality or localities wherein the project will be located]** that the project complies with all applicable land use ordinances.

If the Department has questions regarding this project, please contact **[name]** at **[email address and telephone number]**.

Sincerely yours,

[name]
[title]

[Note: Brackets indicate where applicant should provide project-specific information.]

(Notice of Intent for Solar Energy Project – full PBR projects)

COMPANY LETTERHEAD

[Date]

Ms. Mary E. Major
Renewable Energy Program
Department of Environmental Quality
P. O. Box 1105
629 East Main Street
Richmond, VA 23218
mary.major@deq.virginia.gov

Dear Ms. Major:

On behalf of **[company/applicant]**, I am hereby providing notice to the Department of Environmental Quality of our intention to submit the necessary documentation for a permit by rule for a small renewable energy project (solar) in **[city/county]**, Virginia, pursuant to Virginia Regulation 9VAC15-60.

[Applicant should provide a brief description of the proposed project and its location, including the location coordinates, approximate dimensions of the site including total acreage, approximate number of solar panels, and other key characteristics. Include approximate rated capacity in AC. Projects in this category should have rated capacity greater than 5 MW and not exceeding 150 MW.]

If the Department has questions regarding this project, please contact **[name]** at **[email address and telephone]**.

Sincerely yours,

[name]
[title]

[Note: Brackets indicate where applicant should provide project-specific information.]

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Local Governing Body Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 - 1197.6 B 2 of the Code of Virginia, before such permit application can be considered complete, the applicant must obtain a certification from the governing body of the locality or localities in which the small renewable energy project will be located that the project complies with all applicable land use ordinances.

The undersigned requests that a responsible official of the local governing body sign the certification statement below. In addition, by signing below, the applicant affirms that he has also submitted this form to other localities, if any, in which the proposed project will be located.

Applicant's signature:

Date:

The undersigned local government representative certifies that the proposed small renewable energy project complies with all applicable land use ordinances, as follows:

(Check one block)

The proposed facility **complies with** all applicable land use ordinances.

The proposed facility **does not comply** with all applicable land use ordinances.

Signature of authorized local government representative:

Date:

Type or print name:

Title:

County, City or Town:

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Environmental Permit Certification Form**

Facility Name and Location:

Applicant's Name & Title:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant is submitting an application for a small renewable energy permit by rule from the Virginia DEQ. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the small renewable energy project has applied for or obtained all necessary environmental permits.

List all state and local environmental permits that are necessary for the small renewable energy project listed above. Indicate for each whether the permit has been applied for and/or obtained. If the permit has been obtained, attach either a copy of the permit or a letter from the appropriate agency staff member on agency stationery stating that the permit has been issued and the date of issuance. If a permit has not yet been obtained but has been applied for, provide the name of the permit, name and address of the receiving agency, name of the staff person at the receiving agency to whom the application was addressed (if available), and the date on which the application was submitted. If no permits are necessary, write the word "none" in the first column.

Permit	Permitting Agency / Authority, Address, Contact Person	Applied for (Date)	Obtained (Date)

I hereby certify that the information provided above (and any attached information) is correct and fulfills the requirements of § 10.1-1197.6 B 12 of the Code of Virginia and 9 VAC 15-40-30 A 12.

Applicant's Signature

Date:

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Non-Utility Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his authorized representative an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 H of the Code of Virginia, before such permit application can be considered complete, the applicant must certify the project is proposed, developed, constructed or purchase by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

The undersigned is a responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

Applicant's signature:

Date:

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Utility Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his authorized representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 I 1 and 2 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the project is proposed, developed, constructed or purchased by either a public utility which meets specific criteria or a utility aggregation cooperative.

The undersigned is a responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by:

(Check one block)

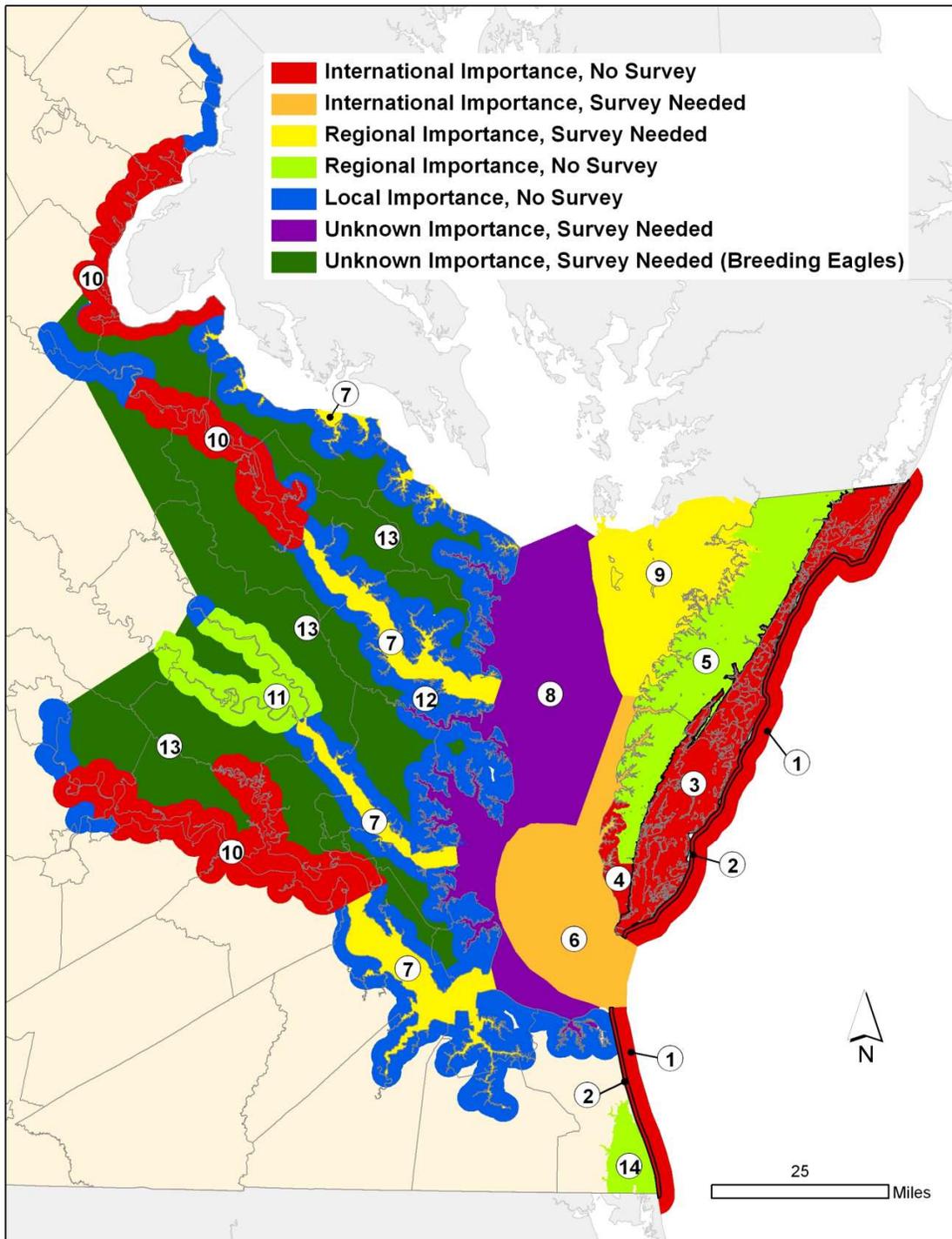
A public utility; the project's costs are not recovered from Virginia jurisdictional customers under base rates, a fuel factor charge under § 56-249.6, or a rate adjustment clause under subdivision A 6 of § 56-585.1.

A utility aggregation cooperative formed under Article 2 (§ 56-231.38 et seq.) of Chapter 9.1 of Title 56.

Applicant's Signature:

Date:

Coastal Avian Protection Zones (CAPZ) Map (PDF Version – 9/2/2011)



Solar Permit by Rule (PBR) GUIDANCE
Department of Environmental Quality (DEQ)
Section III: Coastal Avian Protection Zone (CAPZ) Narrative

(NOTE: The interactive CAPZ map is posted on the [Coastal GEMS website](#))

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CAPZ Map

The Coastal Avian Protection Zone (CAPZ) map was created in 2010 to assist small renewable energy project applicants wishing to construct and operate projects in Virginia's coastal areas in the identification of those zones that are critically important to avian resources. Virginia's small renewable energy permit by rule regulations are administered by the Virginia Department of Environmental Quality (DEQ).

The CAPZ map was the result of a collaborative effort by the Center for Conservation Biology at the College of William and Mary and Virginia Commonwealth University, the Virginia Department of Game and Inland Fisheries (DGIF), the Virginia Coastal Zone Management Program (CZM) and the Virginia Department of Conservation and Recreation – Natural Heritage Program (DCR-NH). The effort was conducted under the auspices of DEQ's Offshore/Coastal Wind Regulatory Advisory Panel as part of DEQ's rulemaking for the Small Renewable Energy Projects (Wind) Permit by Rule Regulation (9 VAC 15-40). The information provided in this document reflects the portion of the work that is applicable to Small Renewable Energy Projects (Solar), as set forth in the Solar Permit by Rule (PBR) Regulation (9VAC15-60). The underlying information used to develop the CAPZ map came from a number of existing data sources, and represents the synthesis of years of field research by a variety of agencies and institutions that are presented and summarized in reports and peer-reviewed publications, some of which are provided on the following pages.

The Solar PBR requires, pursuant to 9VAC15-60-60 B 3, that projects located in part or in whole within zones 1, 2, 3, 4, 5, 10, 11, 12, or 14 on the CAPZ map shall contribute \$1000 per megawatt of rated capacity, or partial megawatt thereof, to a fund in support of research investigating impacts of projects in CAPZ on avian resources. This requirement is less encompassing than the requirements for wind projects in CAPZ. Accordingly, where possible, information relating specifically to wind projects, or to CAPZ zones not addressed by the Solar PBR, has been removed from the original CAPZ Narrative developed for the Wind PBR. (The original information concerning all CAPZ may be found under the Wind PBR Guidance.)

The information below is being provided only to explain why it was deemed important to include these CAPZ in the Solar PBR. It is **for informational purposes only**. Applicants for the Solar PBR are not required to perform any analyses – only to determine whether their project is located in one of the specified zones and then to contribute monetarily to the CAPZ research fund if and as applicable.

CAPZ Criteria and Boundaries

The CAPZ boundaries were determined using a variety of criteria, the majority of which were based on known avian occurrences substantiated by previous or ongoing studies as listed in the supporting literature noted in the descriptions of each CAPZ. The boundaries for CAPZ 1 and 2 were designed to encompass all nearshore waters that fall under the Commonwealth's jurisdiction except for the mouth of the Chesapeake Bay. The exclusion of the mouth of the Bay was based on its likely, but unknown, significance to seabirds and sea ducks and its requirement for field studies. CAPZ 1 and 2 do not require field studies because both are known to serve as a major migratory corridor for a variety of species. The delineation between the two zones is based primarily on the fact that migratory bird densities along the very nearshore fringe (CAPZ 2) are likely to be higher than the density of birds occurring farther offshore, but still within state waters (CAPZ 1). Moreover, CAPZ 2 is likely to harbor foraging breeding birds, including Threatened and Endangered (T&E) species, thereby extending the

season of high avian use to year round. By contrast, CAPZ 1 is likely to have the highest avian use during the non-breeding season.

CAPZ 3, 4, 9, 10, 11 and 14 encompass lands and waters that have been designated as “Important Bird Areas” by the National Audubon Society for their local, regional, continental or global importance to birds. It should be noted that the 100 meter offshore buffer for CAPZ 3 includes foraging habitat for beach nesting shorebirds and seabirds breeding on the barrier islands which feed in the intertidal zone and over open nearshore waters, respectively. CAPZ 5 boundaries encompass the remaining upland portion of the Delmarva Peninsula, which is within the migratory pathway of migrant landbirds and is known to support breeding Bald Eagles. The delineations of CAPZ 6, 7, 8, and 13 encompass lands and waters considered to be important to birds but for which there are not enough data to indicate their overall significance to avian resources and/or to steer mitigation actions. Lastly, the boundaries for CAPZ 12 were established to protect a significant number of breeding Bald Eagles known to nest on the outer fringes of the lower, middle and northern peninsulas.

CAPZ Map Availability

The CAPZ map was generated using DEQ’s Coastal GEMS geospatial data system (9 VAC 15-40-120 B 1) and will ultimately be made available for direct access by applicants who are proposing to locate a small renewable energy project in Virginia’s coastal areas; however, currently an applicant interested in obtaining original datasets must do so by contacting the Coastal Zone Management Program directly:

Laura McKay
629 East Main Street
Richmond, VA 23219
Phone: (804) 698-4323
Fax: (804) 698-4319
Email: laura.mckay@deq.virginia.gov

Additional information can be found through DGIF and DCR-NH at the following websites: Virginia Department of Game and Inland Fisheries Fish and Wildlife Information Services: <http://vafwis.org/fwis/>.

Virginia Department of Conservation and Recreation Natural Heritage Program Resource Information: http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml#lists

Disclaimer:

This document is provided as Guidance and, as such, sets forth standard operating procedures for the agency. It does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

ZONE I

Zone 1: Nearshore waters extending 1 - 4.83 km (0.62 - 3 mi) from Virginia's ocean-facing shoreline, excluding the mouth of the Chesapeake Bay. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (migratory Piping Plovers, Wilson's Plovers, Peregrine Falcons, Gull-billed Terns, and Roseate Terns); hemispherically important migratory corridor for shorebirds, seabirds and waterfowl; and hemispherically important migratory staging area and wintering area for seabirds and waterfowl.

Supporting Literature

- Forsell, D. 2003. Special Report on the distribution and abundance of wintering seaducks and waterbirds in Mid-Atlantic Coastal waters emphasizing the mouth of the Chesapeake Bay. U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD. 10 Pp.
- Stucker, J.H., F.J Cuthbert, B. Winn, B.L. Noel, S.B. Maddock, P.R.Leary, J. Cordes, and L.C. Wemmer. 2010. Distribution of Non-Breeding Great Lakes Piping Plovers (*Charadrius melodus*) along Atlantic and Gulf of Mexico Coastlines: Ten Years of Band Sightings. *Waterbirds* 33(1): 22-32.
- US Fish and Wildlife Service. 2009. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. Northeast Region, Hadley, MA and the Midwest Region's East Lansing Field Office, MI. 206 Pp.
- Watts, B. D. 2010. Wind and waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43 pp.
- Williams, J. W. and B. J. Paxton. 2004a. The Fall 2003 Capes Charles, Virginia Sea bird Watch. Center for Conservation Biology Technical Report Series, CCBTR-04-16. College of William and Mary, Williamsburg, VA. 19 p.
- Williams, J. W. and B. J. Paxton. 2004b. The Spring 2004 Capes Charles, Virginia Seabird Watch. Center for Conservation Biology Technical Report Series, CCBTR-04-17. College of William and Mary, Williamsburg, VA. 18 p.

ZONE 2

Zone 2: Nearshore waters that extend from Virginia's ocean-facing shoreline out to 1 km (0.62 mi), excluding the mouth of the Chesapeake Bay. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (migratory and breeding Piping Plovers, Wilson's Plovers, Peregrine Falcons and Gull-billed Terns, and migratory Roseate Terns) and hemispherically important migratory corridor, migratory staging area, and wintering area for shorebirds, seabirds and waterfowl.

Supporting Literature

- Boettcher, R., T. Penn, R.R. Cross, K.T. Terwilliger, and R.A. Beck. 2007. An overview of the status and distribution of Piping Plovers in Virginia. *Waterbirds* 30(sp1): 138-151.
- Boettcher, R. and A.L. Wilke. 2009. 2008 Colonial Waterbird Breeding Status on Virginia's Barrier Islands. Final report to the Virginia Department of Conservation and Recreation Division of Natural Heritage, Nassawadox, VA. 23 Pp.
- Cohen, J.B., S.M. Karpanty, J.D. Fraser, B.D. Watts, and B.R. Truitt. 2009. Residence probability and population size of Red Knots during spring stopover in the mid-Atlantic Region of the United States. *Journal of Wildlife Management*. Vol. 73 (6): 939-945.
- Forsell, D. 2003. Special Report on the distribution and abundance of wintering seaducks and waterbirds in Mid-Atlantic Coastal waters emphasizing the mouth of the Chesapeake Bay. U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD. 10 Pp.
- Stucker, J.H., F.J. Cuthbert, B. Winn, B.L. Noel, S.B. Maddock, P.R. Leary, J. Cordes, and L.C. Wemmer. 2010. Distribution of Non-Breeding Great Lakes Piping Plovers (*Charadrius melodus*) along Atlantic and Gulf of Mexico Coastlines: Ten Years of Band Sightings. *Waterbirds* 33(1): 22-32.
- US Fish and Wildlife Service. 2009. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. Northeast Region, Hadley, MA and the Midwest Region's East Lansing Field Office, MI. 206 Pp.
- Watts, B. D. 2010. Wind and waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43 pp.
- Williams, J. W. and B. J. Paxton. 2004a. The Fall 2003 Capes Charles, Virginia Sea bird Watch. Center for Conservation Biology Technical Report Series, CCBTR-04-16. College of William and Mary, Williamsburg, VA. 19 p.

Williams, J. W. and B. J. Paxton. 2004b. The Spring 2004 Capes Charles, Virginia Seabird Watch. Center for Conservation Biology Technical Report Series, CCBTR-04-17. College of William and Mary, Williamsburg, VA. 18 p.

ZONE 3

Zone 3: Barrier island/seaside lagoon system, including a 100 m (328 ft) offshore buffer. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding and migratory Piping Plovers, Wilson's Plovers, Gull-billed Terns, Peregrine Falcons and Bald Eagles, and hemispherically important staging area and wintering area for shorebirds, seabirds and waterfowl.

Supporting Data: Mid-winter aerial waterfowl survey counts conducted each year in early January, 1998 - 2010(file name: MidwinterSurvey_all yrs.xls) These data are available at the Virginia Department of Game and Inland Fisheries Fish and Wildlife Information Services <http://vafwis.org/fwis/>. **Caution:** The purpose of these data is to confirm the presence of wintering waterfowl in Virginia's coastal waters and to provide some measure of species diversity within relevant CAPZ. They should not be used to estimate and/or draw inferences about waterfowl population trends.

Supporting Literature

Boettcher, R., T. Penn, R.R. Cross, K.T. Terwilliger, and R.A. Beck. 2007. An overview of the status and distribution of Piping Plovers in Virginia. *Waterbirds* 30(sp1): 138-151.

Boettcher, R. and A.L. Wilke. 2009. 2008 Colonial Waterbird Breeding Status on Virginia's Barrier Islands. Final report to the Virginia Department of Conservation and Recreation Division of Natural Heritage, Nassawadox, VA. 23 Pp.

Brinker, D. F., B. Williams, B. D. Watts, and R. M. Erwin. 2007. Colonial nesting seabirds in the Chesapeake Bay region: where have we been and where are we going? *Waterbirds* 30:93-104.

Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>

Cohen, J.B., S.M. Karpanty, J.D. Fraser, B.D. Watts, and B.R. Truitt. 2009. Residence probability and population size of Red Knots during spring stopover in the mid-Atlantic Region of the United States. *Journal of Wildlife Management*. Vol. 73 (6): 939-945.

Mojica, E.K., B.D. Watts, and S.M. Padgett. 2010. Virginia Peregrine Falcon monitoring and management program: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-10. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 21 pp.

Molina, K.C. and M. Erwin. 2006. The Distribution and conservation status of the Gull-billed Tern (*Gelochelidon nilotica*) in North America. *Waterbirds* Vol. 29(3): 271-295.

- Smith, F.M., A. E. Duerr, B.J. Paxton and B.D. Watts. 2008. An Investigation of Stopover Ecology of the Red Knot on the Virginia Barrier Islands. Center for Conservation Biology Technical Report Series, CCBTR-07-14. College of William and Mary, Williamsburg, VA. 35pp.
- Smith, F.M., B. D. Watts, and A.E. Duerr. 2009. Migration Ecology of the Whimbrel: Fall 2009 Report. Center for Conservation Biology Technical Report Series, CCBTR-09-13. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 27 pp.
- Stucker, J.H., F.J Cuthbert, B. Winn, B.L. Noel, S.B. Maddock, P.R. Leary, J. Cordes, and L.C. Wemmer. 2010. Distribution of Non-Breeding Great Lakes Piping Plovers (*Charadrius melodus*) along Atlantic and Gulf of Mexico Coastlines: Ten Years of Band Sightings. *Waterbirds* 33(1): 22-32.
- Truitt, B.R. and D.J. Schwab. 2001. 1998 Eastern Shore seaside barrier island/lagoon colonial waterbird survey. *The Raven* Vol. 72(2): 126-131.
- US Fish and Wildlife Service. 2009. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. Northeast Region, Hadley, MA and the Midwest Region's East Lansing Field Office, MI. 206 Pp.
- Watts, B. D. 1994. Distribution of colonial waterbirds on the Eastern Shore of Virginia: Implications for beneficial uses of dredge material. Center for Conservation Biology Technical Report, CCBTR-94-04. College of William and Mary, Williamsburg, VA. 92pp.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase I Delmarva Peninsula and tidewater. Center for Conservation Biology Technical Report Series, CCBTR-06-05. College of William and Mary, Williamsburg, VA. 70 pp.
- Watts, B. D. 2010. Wind and waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43 pp.
- Watts, B. D., D. S. Bradshaw, and R. R. Cross. 1996. Annual Plover survey of the Virginia Barrier Islands: A ten year summary. *The Raven* 67: 84-89
- Watts, B. D. and B. R. Truitt. 2001. Abundance of shorebirds along the Virginia Barrier Islands during spring migration. *The Raven* 71: 1-12.
- Watts, B. D. and S. J. Rottenborn. 2002. Status of breeding Northern Harriers in coastal Virginia. *The Raven* 72:153-157.
- Watts, B. D., S. M. Padgett, M. A. Byrd, B. J. Paxton, and Jeffrey L. Cooper. 2002. FALCONTRAK: Year 2001 report. Center for Conservation Biology Technical Report Series. CCBTR-02-06. College of William and Mary, Williamsburg, VA. 46pp.

- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D., B. J. Paxton. 2009. Status and distribution of colonial waterbirds in coastal Virginia: 2008 breeding season. CCBTR-09-03. Center for Conservation Biology, College of William and Mary/Virginia Commonwealth University, Williamsburg, VA 21 pp.
- Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Watts, B. D., B. R. Truitt, F. M. Smith, E. K. Mojica, B. J. Paxton, A. L. Wilke, and A. E. Duerr. 2008. Whimbrel tracked with satellite transmitter on migratory flight across North America. *Wader Study Group Bulletin* 115:55-57.
- Watts, B. D. and B. R. Truitt. 2010. Decline of whimbrels within a mid-Atlantic staging area (1994-2009). *Waterbirds*, In Press.
- Wilke, A. L., B.D. Watts, B.R. Truitt and R. Boettcher. 2005. Breeding season status of the American Oystercatcher in Virginia, USA. *Waterbirds* 28(3): 308-315.
- Wilke, A.L., R. Boettcher, and C. Smith. 2009. 2008 Piping Plover, Wilson's Plover and American Oystercatcher Breeding Status in Virginia. Final Report submitted to the Virginia Department of Conservation and Recreation Division of Natural Heritage, Nassawadox, VA. 23 Pp.
- Williams, B., D. F. Brinker, B. D. Watts, and R. M. Erwin. 2007. The status of colonial nesting wading bird populations within the Chesapeake Bay and coastal barrier island lagoon system. *Waterbirds* 30:82-92.
- Wilson, M. D., B. D. Watts, and J. E. LeClerc. 2007. Assessing habitat stability for disturbance-prone species by evaluating landscape dynamics along the Virginia barrier islands. Center for Conservation Biology Technical Report Series, CCBTR-07-06. College of William and Mary, Williamsburg, VA. 47pp.
- Wilson, M. D., B. D. Watts, and F. M. Smith. 2009. Status and Distribution of Black Rails in Virginia. Center for Conservation Biology Technical Report Series, CCBTR-0-010. College of William and Mary and Virginia Commonwealth University. Williamsburg, VA. 22 pp.

ZONE 4

Zone 4: Southern end of the Delmarva Peninsula (mainland only), including a 10 km long (6.21 mi) strip along the western (bayside) fringe of peninsula that extends from Wise Point to (and including) Savage Neck. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (migratory Peregrine Falcons and breeding and migratory Bald Eagles), the designation as an Important Bird Area, and hemispherically important migratory staging area for passerines and other landbirds.

Supporting Literature

- Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>
- Lukei, R. F., Jr. and M. A. Byrd. 2001. Lower Delmarva Peninsula raptor migration study: Year 2000 report. Center for Conservation Biology Technical Report CCBTR-01-01, College of William and Mary: 10 pp.
- Lukei, R. F., Jr. and M. A. Byrd. 2002. Trapping and banding of raptors on the Eastern Shore of Virginia: September 5 - December 2, 2001. Center for Conservation Biology Technical Report CCBTR-02-01, College of William and Mary: 16 pp.
- Paxton, B. J. and B. D. Watts. 2000. Investigation of grassland/shrubland migrants on the lower Delmarva Peninsula. Center for Conservation Biology Technical Report CCBTR-00-03, College of William and Mary: 23 pp.
- Paxton, B. J. and B. D. Watts. 2001. Fall stop-over ecology of neotropical migrants: Are inner or outer coastal habitats energy sources for migrants. Center for Conservation Biology Research Report Series, CCBTR-01-11. College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase I Delmarva Peninsula and tidewater. Center for Conservation Biology Technical Report Series, CCBTR-06-05. College of William and Mary, Williamsburg, VA. 70 pp.
- Watts, B. D. and S. E. Mabey. 1993. Spatio-temporal patterns of landbird migration on the lower Delmarva Peninsula. Center for Conservation Biology Technical Report CCBTR-93-01, College of William and Mary.
- Watts, B. D. and S. E. Mabey. 1994. Migratory landbirds of the lower Delmarva: Habitat selection and geographic distribution. Center for Conservation Biology Technical Report CCBTR-94-05, College of William and Mary: 101 pp.
- Watts, B. D. and S. E. Mabey. 1994. Northampton migratory bird habitat utilization study: Year two. Center for Conservation Biology Technical Report CCBTR-94-02, College of William and Mary: 16 pp.

- Watts, B. D., M. D. Wilson, and D. S. Bradshaw. 1997. Habitat requirements of early successional bird communities: Management implications for mid-Atlantic region. Center for Conservation Biology Technical Report, CCBTR-97-03. College of William and Mary, Williamsburg, VA. 62pp.
- Watts, B. D. and S. J. Rottenborn. 2002. Status of breeding Northern Harriers in coastal Virginia. *The Raven* 72:153-157.
- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D., B. J. Paxton, and Z. Smith. 2004. Raptor trapping at Wise Point Station: Year 2003 report. Center for Conservation Biology Technical Report Series, CCBTR-04-02. College of William and Mary, Williamsburg, VA. 24 pp.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Watts, B. D. and S. E. Mabey. 2010. Relationship between vegetation volume and fall migrants along the lower Delmarva Peninsula. *Wilson Journal of Ornithology*, In Press.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2007. Status, distribution and the future of Bald Eagles in the Chesapeake Bay. *Waterbirds* 30:25-38.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* 72:152-158.
- Whalen, D. M. and B. D. Watts. 2002. Annual migration density and stopover patterns of Northern Saw-whet Owls (*Aegolius acadicus*). *Auk* 119:1161-2002.
- Whalen, D. M., B. D. Watts, M. D. Wilson, and D. S. Bradshaw. 1997. Magnitude and timing of the fall migration of Northern Saw-whet Owls through the Eastern Shore of Virginia, 1994-1996. *The Raven* 68:97-104.
- Wilson, M. D. and B. D. Watts. 1997. Autumn migration of Gray-cheeked and Bicknell's Thrushes at Kiptopeke, Virginia, USA. *Journal of Field Ornithology* 68:519-525
- Wilson, M. D., B. D. Watts, and D. F. Brinker. 2007. Status review of Chesapeake Bay marsh lands and breeding marsh birds. *Waterbirds* 30:122-137.

ZONE 5

Zone 5: Delmarva Peninsula, excluding zones 3 and 4. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding Bald Eagles) and regionally to hemispherically important fall migratory staging area for landbirds.

Supporting Literature

- Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>
- Smith, F. M., B. D. Watts, and B. J. Paxton. 2010. Autumn Migration of the Northern Saw-whet Owl on the Lower Delmarva Peninsula: Fall 2010 Report. Center for Conservation Biology Technical Report Series, CCBTR-10-12. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 17 pp.
- Lukei, R. F., Jr. and M. A. Byrd. 2001. Lower Delmarva Peninsula raptor migration study: Year 2000 report. Center for Conservation Biology Technical Report CCBTR-01-01, College of William and Mary: 10 pp.
- Mabey, S. E. and B. D. Watts. 2000. Conservation of landbird migrants: Addressing local policy. *Studies in Avian Biology*, 20:99-108.
- Mabey, S. E., B. J. Paxton, B. D. Watts, F. M. Smith, D. Dawson, and B. R. Truitt. 2007. Baseline assessment of neotropical migrant landbird stopover habitat in the lower Chesapeake Bay region for conservation planning and protection. Final report to USGS. College of William and Mary, Williamsburg, VA 63 pp.
- Mojica, E.K., B.D. Watts, and S.M. Padgett. 2010. Virginia Peregrine Falcon monitoring and management program: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-10. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 21 pp.
- Watts, B. D., S. M. Padgett, M. A. Byrd, B. J. Paxton, and Jeffrey L. Cooper. 2002. FALCONTRAK: Year 2001 report. Center for Conservation Biology Technical Report Series. CCBTR-02-06. College of William and Mary, Williamsburg, VA. 46pp.
- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. and S. E. Mabey. 1994. Migratory landbirds of the lower Delmarva: Habitat selection and geographic distribution.. Center for Conservation Biology Technical Report CCBTR-94-05, College of William and Mary: 101 pp.
- Watts, B. D. and S. E. Mabey. 1994. Northampton migratory bird habitat utilization study: Year two. Center for Conservation Biology Technical Report CCBTR-94-02, College of William and Mary: 16 pp.

- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Watts, B. D. and S. E. Mabey. 2010. Relationship between vegetation volume and fall migrants along the lower Delmarva Peninsula. *Wilson Journal of Ornithology*, In Press.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2007. Status, distribution and the future of Bald Eagles in the Chesapeake Bay. *Waterbirds* 30:25-38.
- Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* 72:152-158.
- Whalen, D. M. and B. D. Watts. 2002. Annual migration density and stopover patterns of Northern Saw-whet Owls (*Aegolius acadicus*). *Auk* 119:1161-2002.
- Whalen, D. M., B. D. Watts, M. D. Wilson, and D. S. Bradshaw. 1997. Magnitude and timing of the fall migration of Northern Saw-whet Owls through the Eastern Shore of Virginia, 1994-1996. *The Raven* 68:97-104.
- Wilke, A. L., D. F. Brinker, B. D. Watts, A. H. Traut, R. Boettcher, J. M. McCann, B. R. Truitt, and P. P. Denmon. 2007. American Oystercatchers in Maryland and Virginia: Status and distribution. *Waterbirds* 30:152-162.
- Wilson, M. D. and B. D. Watts. 1997. Autumn migration of Gray-cheeked and Bicknell's Thrushes at Kiptopeke, Virginia, USA. *Journal of Field Ornithology* 68:519-525.
- Wilson, M. D., B. D. Watts, and D. F. Brinker. 2007. Status review of Chesapeake Bay marsh lands and breeding marsh birds. *Waterbirds* 30:122-137.
- Wilson, M. D., B. D. Watts, and F. M. Smith. 2009. Status and Distribution of Black Rails in Virginia. Center for Conservation Biology Technical Report Series, CCBTR-0-010. College of William and Mary and Virginia Commonwealth University. Williamsburg, VA. 22 pp.

ZONE 10

Zone 10: Upper reaches of the James, Rappahannock and Potomac rivers. In this zone, the relevant avian species and other avian mitigation factors are T&E species (breeding Bald Eagles and continentally important Bald Eagle concentration areas), the designation as Important Bird Areas, and locally to continentally important waterfowl wintering areas.

Supporting Literature

- Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>
- Markham, A. C. and B. D. Watts. 2008. The influence of salinity on provisioning rates and nestling growth in bald eagles in the lower Chesapeake Bay. *Condor* 110:183-187.
- Markham, A. C. and B. D. Watts. 2008. The influence of salinity on the diet of nesting bald eagles. *Journal of Raptor Research* 42:99-109.
- Mojica, E.K., B.D. Watts, and S.M. Padgett. 2010. Virginia Peregrine Falcon monitoring and management program: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-10. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 21 pp.
- Paxton, B. J. and B. D. Watts. 2001. Fall stop-over ecology of neotropical migrants: Are inner or outer coastal habitats energy sources for migrants. Center for Conservation Biology Research Report Series, CCBTR-01-11. College of William and Mary, Williamsburg, Va. 46 pp.
- Paxton, B. J. and B. D. Watts. 2003. Bird surveys of Lee and Hill Marshes on the Pamunkey River: Possible affects of sea-level rise on marsh bird communities. Center for Conservation Biology Technical Report Series. CCBTR-03-02. College of William and Mary, Williamsburg, VA 31 pp.
- Perry, M.C., A.M. Wells-Berlin, D.M. Kidwell, and P.C. Osenton. 2007. Temporal changes of populations and trophic relationships of wintering diving ducks in the Chesapeake Bay. *Waterbirds* Vol. 30 (sp 1): 4-16.
- Viverette, C. B., G. C. Garman, S. McIninch, A. C. Markham, B. D. Watts, and S. A. Macko. 2007. Finfish-waterbird trophic interactions in tidal freshwater tributaries of the Chesapeake Bay. *Waterbirds* 30:50-62.
- Watts, B. D. and S. Factor. 1994. Eagle investigations within the James River Concentration Area. Center for Conservation Biology Technical Report CCBTR-94-01, College of William and Mary: 13 pp.
- Watts, B. D. and D. M. Whalen. 1997. Interactions between Eagles and Humans in the James River Bald Eagle Concentration Area. Center for Conservation Biology Technical Report, CCBTR-97-02. College of William and Mary, Williamsburg, VA. 81pp.

- Watts, B. D. 1998. Investigation of bald eagles within the Rappahannock River Concentration Area. Center for Conservation Biology Technical Report CCBTR-98-02, College of William and Mary: 65 pp.
- Watts, B. D. and M. A. Byrd. 1999. Expansion of the James River Bald Eagle concentration area. *The Raven* 70: 18-23.
- Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.
- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase II Western Shore. Center for Conservation Biology Technical Report Series, CCBTR-06-13. College of William and Mary, Williamsburg, VA. 78 pp.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D., A. C. Markham, and M. A. Byrd. 2006. Salinity and population parameters of Bald Eagles (*Haliaeetus leucocephalus*) in the lower Chesapeake Bay. *Auk* 123:393-404.
- Watts, B. D., M. D. Wilson, F. M. Smith, B. J. Paxton, and J. B. Williams. 2008. Breeding range expansion of the Coastal Plain Swamp Sparrow. *The Wilson Journal of Ornithology* 120:393-395.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2007. Status, distribution and the future of Bald Eagles in the Chesapeake Bay. *Waterbirds* 30:25-38.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* 72:152-158.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Wilson, M. D., B. D. Watts, and D. F. Brinker. 2007. Status review of Chesapeake Bay marsh lands and breeding marsh birds. *Waterbirds* 30:122-137.

ZONE 11

Zone 11: Lower reaches of the Mattaponi and Pamunkey tributaries. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding Bald Eagles) and the designation as an Important Bird Area.

Supporting Literature

- Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>
- Viverette, C. B., G. C. Garman, S. McIninch, A. C. Markham, B. D. Watts, and S. A. Macko. 2007. Finfish-waterbird trophic interactions in tidal freshwater tributaries of the Chesapeake Bay. *Waterbirds* 30:50-62.
- Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.
- Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.
- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase II Western Shore. Center for Conservation Biology Technical Report Series, CCBTR-06-13. College of William and Mary, Williamsburg, VA. 78 pp.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D., A. C. Markham, and M. A. Byrd. 2006. Salinity and population parameters of Bald Eagles (*Haliaeetus leucocephalus*) in the lower Chesapeake Bay. *Auk* 123:393-404.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2007. Status, distribution and the future of Bald Eagles in the Chesapeake Bay. *Waterbirds* 30:25-38.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* 72:152-158.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.

Wilson, M. D., B. D. Watts, and D. F. Brinker. 2007. Status review of Chesapeake Bay marsh lands and breeding marsh birds. *Waterbirds* 30:122-137.

ZONE 12

Zone 12: Outer fringes of the lower, middle and northern peninsulas. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding Bald Eagles).

Supporting Data:

- 2009 monthly bird counts at Craney Island Dredge Material Management Area (file name: 2009CraneyIs_ebirdReports.xls)
- 2010 monthly bird counts at Craney Island Dredge Material Management Area (file name: 2010CraneyIs_ebirdReports.xls)

These data are available at the Virginia Department of Game and Inland Fisheries Fish and Wildlife Information Services <http://vafwis.org/fwis/> **Caution:** The purpose of these data is to confirm avian occurrences and provide some measure of species diversity at Craney Island Dredge Material Management Area which located in Zone 12. They should not be used to estimate and/or draw inferences about overall avian population trends in Zone 12.

Supporting Literature

Brinker, D. F., B. Williams, B. D. Watts, and R. M. Erwin. 2007. Colonial nesting seabirds in the Chesapeake Bay region: where have we been and where are we going? *Waterbirds* 30:93-104.

Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginiaeagles/locator.php>

Watts, B. D. 1992. The influence of marsh size on marsh value for bird communities of the lower Chesapeake Bay. Center for Conservation Biology Technical Report, CCBTR-92-01. College of William and Mary, Williamsburg, VA. 115pp.

Watts, B. D. 1993. Effects of marsh size on incidence rates and community organization within the lower Chesapeake Bay. Center for Conservation Biology Technical Report, CCBTR-93-03. College of William and Mary, Williamsburg, VA. 53pp

Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.

Watts, B. D. and S. J. Rottenborn. 2002. Status of breeding Northern Harriers in coastal Virginia. *The Raven* 72:153-157.

Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.

- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2007. Status, distribution and the future of Bald Eagles in the Chesapeake Bay. *Waterbirds* 30:25-38.
- Watts, B. D., G. D. Therres, and M. A. Byrd. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* 72:152-158.
- Watts, B. D., B. J. Paxton. 2009. Status and distribution of colonial waterbirds in coastal Virginia: 2009 breeding season. CCBTR-09-03. Center for Conservation Biology, College of William and Mary/Virginia Commonwealth University, Williamsburg, VA 21 pp.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.
- Wilke, A. L., D. F. Brinker, B. D. Watts, A. H. Traut, R. Boettcher, J. M. McCann, B. R. Truitt, and P. P. Denmon. 2007. American Oystercatchers in Maryland and Virginia: Status and distribution. *Waterbirds* 30:152-162.
- Williams, B., D. F. Brinker, B. D. Watts, and R. M. Erwin. 2007. The status of colonial nesting wading bird populations within the Chesapeake Bay and coastal barrier island lagoon system. *Waterbirds* 30:82-92.
- Wilson, M. D., B. D. Watts, and D. F. Brinker. 2007. Status review of Chesapeake Bay marsh lands and breeding marsh birds. *Waterbirds* 30:122-137.
- Wilson, M. D., B. D. Watts, and F. M. Smith. 2009. Status and Distribution of Black Rails in Virginia. Center for Conservation Biology Technical Report Series, CCBTR-0-010. College of William and Mary and Virginia Commonwealth University. Williamsburg, VA. 22 pp.

ZONE 14

Zone 14: Back Bay and surrounding private lands. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding Bald Eagles), the designation as Important Bird Area, and locally to continentally important migratory staging area and wintering area for waterfowl.

Recent supporting data made available by Back Bay NWR:

- 2008 peak monthly waterbird totals in Back Bay NWR impoundments (file name: 2008PeakWaterbirdPops.xls)
- 2009 peak monthly waterbird totals in Back Bay NWR impoundments (file name: 2009PeakWaterbirdPops.xlsx)
- 2009 weekly shorebird totals at Back Bay NWR and False Cape State Park beaches and impoundments (file name: Shorebirds2009.xls)
- 2009 weekly waterfowl totals at Back Bay NWR and False Cape State Park impoundments (file name: Waterfowl2009.xls)
- 2009 weekly marshbird, raptor and other species totals at Back Bay NWR and False Cape State Park impoundments (file name: Marshbirds,etc2009.xls)
- 2010 weekly shorebird totals at Back Bay NWR and False Cape State Park beaches and impoundments (file name: Shorebirds2010.xls)
- 2010 weekly waterfowl totals at Back Bay NWR and False Cape State Park impoundments (file name: Waterfowl2010.xls)
- 2010 weekly marshbird, raptor and other species totals at Back Bay NWR and False Cape State Park impoundments (file name: Marshbirds2010.xls)

These data are available at the Virginia Department of Game and Inland Fisheries Fish and Wildlife Information Services <http://vafwis.org/fwis/> **Caution:** The purpose of these data is to confirm avian occurrences and provide some measure of species diversity at Back Bay NWR, which is located in Zone 14. They should not be used to estimate and/or draw inferences about overall avian population trends in Zone 14.

Supporting Literature

Center for Conservation Biology. 2010. Virginia eagle nest locator. <http://www.ccb-wm.org/virginia eagles/locator.php>

Watts, B. D. and M. A. Byrd. 1998. Status and distribution of colonial waterbirds in coastal Virginia. *The Raven* 69:20-31.

Watts, B. D. and B. J. Paxton. 2004. Digital atlas of colonial waterbirds in coastal Virginia:2003 breeding season. CCBTR-04-05. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.

- Watts, B. D. 2004. Status and distribution of colonial waterbirds in coastal Virginia: 2003 breeding season. CCBTR-04-06. Center for Conservation Biology, College of William and Mary, Williamsburg, VA 25 pp.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase I Delmarva Peninsula and tidewater. Center for Conservation Biology Technical Report Series, CCBTR-06-05. College of William and Mary, Williamsburg, VA. 70 pp.
- Watts, B. D. 2006. Synthesizing information resources for the Virginia Important Bird Area Program: Phase II Western Shore. Center for Conservation Biology Technical Report Series, CCBTR-06-13. College of William and Mary, Williamsburg, VA. 78 pp.
- Watts, B. D. and M. A. Byrd. 2006. Status and distribution of colonial waterbirds in coastal Virginia: The 2003 breeding season. *The Raven* 77:3-22.
- Watts, B. D. 2010. Wind and waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43 pp.
- Watts, B. D. and M. A. Byrd 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary and Virginia Commonwealth University, Williamsburg, VA. 40 pp.