

Appendix A

References

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REFERENCES

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Appendix B

List of Acronyms and Abbreviations

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
177 FW	177 th Fighter Wing
177 FW CC	Commander
177 FW CEM	Operations and Maintenance Office
177 FW DET/CC	Range Commander
177 FW EM	Environmental Manager
177 FW LG	Legal Office
177 FW PA	Public Affairs Office
177 FW RCO	Range Control Officer
177 FW SE	Flight Safety Officer
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AG	Agricultural Outleasing
ANG	Air National Guard
ANGB	Air National Guard Base
BASH	Bird/Wildlife Aircraft Strike Hazard
BH	Bird/Wildlife Aircraft Strike Hazard
BMP	Best Management Practice
CFR	Code of Federal Regulations
CLE	Conservation Law Enforcement
CLEO	Conservation Law Enforcement Officer
CMP	Comprehensive Management Plan
CRP	Cultural Resources Protection
CWA	Clean Water Act
CZ	Coastal Zone and Marine Resources Management
DEPARC	Defense Environmental Programs and Annual Report to Congress
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDM	Department of Defense Manual
EISA	Energy Independence Security Act
EM	Environmental Manager
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FM	Forest Management
ft	Foot (Feet)

FW	Fighter Wing
FWM	Fish and Wildlife Management
GIS	Geographic Information System
GM	Grounds Maintenance
ICRMP	Integrated Cultural Resources Management Plan
in.	Inch(es)
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
IPMC	Integrated Pest management Coordinator
IPMP	Integrated Pest Management Plan
JA	Judge Advocate
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NJAC	New Jersey Administrative Code
NJANG	New Jersey Air National Guard
NJDEP	New Jersey Department of Environmental Protection
NJFFS	New Jersey Forest Fire Service
NJPC	New Jersey Pinelands Commission
NJSP	New Jersey State Police
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRP	Natural Resources Program Management
OR	Outdoor Recreation and Public Access to Natural Resources
pH	Hydrogen Ion Concentration
PMC	Pest Management Consultant
PO	Public Outreach
RCO	Range Control Officer
REPI	Readiness and Environmental Protection Initiative
SAIA	Sikes Act Improvement Act
SEAL	Sea-Air-Land
SHPO	New Jersey State Historic Preservation Office
T&E	Threatened or Endangered Species
TE	Threatened and Endangered Species and Habitats

TGM	Training Maverick Guided Missile
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USDA	United States Department of Agriculture
USDA-WS	United States Department of Agriculture – Wildlife Services
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WFM	Wildland Fire Management
WGR	Warren Grove Bombing Range
WMA	Wildlife Management Area
WP	Wetland Protection
WRP	Water Resources Protection

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Appendix C

Agency Consultation and Task Force Meeting Minutes

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NATIONAL GUARD BUREAU

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JOINT BASE ANDREWS MD 20762-5157

29 April 2016

Carlo Popolizio
U.S. Fish and Wildlife Service
New Jersey Field Office
4 East Jimmie Leeds Road, Unit 4
Galloway, New Jersey 08205-4465

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Mr. Popolizio:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

The INRMP recommends various management practices, in compliance with Federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of the Installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of the Installation's mission, and, therefore, is the primary tool for managing the Installations' ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities, as well as the maintenance of environmental quality through the efficient management of natural resources.

The Warren Grove Bombing Range INRMP Update will be developed using an interdisciplinary approach and information gathered from a variety of organizations. An INRMP Task Force will be formed, and will include key Installation personnel and individuals from various agencies and groups that have an interest in Warren Grove Bombing Range and the management of their resources.

Representatives from the following Federal and state agencies and groups will comprise the INRMP Task Force: the USFWS – New Jersey Field Office, New Jersey DEP Division of Fish and Wildlife, New Jersey Pineland Commission, and Drexel University. We request your attendance at these meetings. In addition, individual Task Force members will be contacted to obtain further information and guidance. The Task Force ensures that information concerning the natural resources on or in the vicinity of the Installation is accurate and is presented acknowledging local and regional management strategies. The first Task Force Meeting is scheduled for May 19, 2016, at 10:00 am in Building #1 at Warren Grove Bombing Range.



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Warren Grove Bombing Range is located at 150 Bombing Range Road, Barnegat, NJ 08005. The access road is off of Route 539 between mile markers 7 and 8. Warren Grove Bombing Range is located approximately 1 mile down the access road. When you arrive at the security gate, please press the call button or call the range at 609-677-6700 for access. The parking lot for Building #1 is on the right after you enter the range. Should you have any questions regarding directions or access to the range please the Warren Grove Range central Number 609-761-6700.

The collaborative INRMP Task Force is designed to ensure that the management goals, objectives, and actions of the INRMP reflect the goals of your organization. Should you have any questions about the INRMP prior to the meeting, please contact Rich Defeo at 609-761-6303. We look forward to our continued working relationship with the USFWS.

Sincerely,

Melanie Frisch
Natural Resources Program Manager



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29 April 2016

Jeremy Markuson
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
New Jersey Field Office
4 East Jimmie Leeds Road, Unit 4
Galloway, New Jersey 08205-4465

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Mr. Markuson:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

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Sincerely,

Melanie Frisch
Natural Resources Program Manager



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JOINT BASE ANDREWS MD 20762-5157

29 April 2016

Dr. Walter Bien
Drexel University
144 Summit Avenue
Langhorne, PA 19047

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Dr. Bien:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

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Sincerely,

Melanie Frisch
Natural Resources Program Manager



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JOINT BASE ANDREWS MD 20762-5157

29 April 2016

Kim J. Laidig
Principal Research Scientist
Pinelands Commission
P. O. Box 359
15 Springfield Road
New Lisbon, NJ 08064

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Ms. Laidig:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

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Sincerely,

Melanie Frisch
Natural Resources Program Manager



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JOINT BASE ANDREWS MD 20762-5157

29 April 2016

Rhonda Ward
Environmental Specialist
NJ Pinelands Commission
PO Box 359
15 Springfield Road
New Lisbon, NJ 08064

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Ms. Ward:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

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Sincerely,

Melanie Frisch
Natural Resources Program Manager



NATIONAL GUARD BUREAU

3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

29 April 2016

Dave Jenkins
New Jersey Department of Environmental Protection
Division of Fish and Wildlife
Mail Code 501-03
PO Box 420
501 East State Street
3rd Floor
Trenton, NJ 08625-0420

Subject: Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Mr. Jenkins:

This letter is to request your assistance in the review and coordination of the Warren Grove Bombing Range INRMP Update. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2011 INRMP is being updated for Warren Grove Bombing Range, New Jersey, and is currently in the Draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state fish and wildlife agency (i.e., New Jersey Department of Environmental Protection (DEP), Division of Fish and Wildlife). In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

The INRMP recommends various management practices, in compliance with Federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of the Installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of the Installation's mission, and, therefore, is the primary tool for managing the Installations' ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities, as well as the maintenance of environmental quality through the efficient management of natural resources.

The Warren Grove Bombing Range INRMP Update will be developed using an interdisciplinary approach and information gathered from a variety of organizations. An INRMP Task Force will be formed, and will include key Installation personnel and individuals from various agencies and groups that have an interest in Warren Grove Bombing Range and the management of their resources. Representatives from the following Federal and state agencies and groups will comprise the INRMP Task Force: the USFWS – New Jersey Field Office, New Jersey DEP Division of Fish and Wildlife, New Jersey Pineland Commission, and Drexel University. We request your attendance at these meetings. In addition, individual Task Force members will be contacted to obtain further information and guidance.



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The Task Force ensures that information concerning the natural resources on or in the vicinity of the Installation is accurate and is presented acknowledging local and regional management strategies. The first Task Force Meeting is scheduled for May 19, 2016, at 10:00 am in Building #1 at Warren Grove Bombing Range.

Warren Grove Bombing Range is located at 150 Bombing Range Road, Barnegat, NJ 08005. The access road is off of Route 539 between mile markers 7 and 8. Warren Grove Bombing Range is located approximately 1 mile down the access road. When you arrive at the security gate, please press the call button or call the range at 609-677-6700 for access. The parking lot for Building #1 is on the right after you enter the range. Should you have any questions regarding directions or access to the range please the Warren Grove Range central Number 609-761-6700.

The collaborative INRMP Task Force is designed to ensure that the management goals, objectives, and actions of the INRMP reflect the goals of your organization. Should you have any questions about the INRMP prior to the meeting, please contact Rich Defeo at 609-761-6303. We look forward to our continued working relationship with the New Jersey DEP, Division of Fish and Wildlife.

Sincerely,

Melanie Frisch
Natural Resources Program Manager

**Warren Grove Bombing Range
INRMP Task Force Meeting
May 19, 2016 10:00 AM**

Meeting Attendees

Melanie Frisch, Natural Resources Manager, ANG
Major Rich DeFeo, Environmental Manager, Warren Grove Range
MSgt Michael Mimler, Civil Engineer, Warren Grove Range
Carlo Popolizio, Biologist, U.S. Fish and Wildlife Service
Jeremy Markuson, Biologist, U.S. Fish and Wildlife Service
Rhonda Ward, Environmental Specialist, New Jersey Pinelands Commission
Kim Laidig, Research Scientist, New Jersey Pinelands Commission
Walter Bien, Director, Office of Pinelands Research, Drexel University
Marilyn Sobel, Biologist, Office of Pinelands Research, Drexel University
Dane Ward, Biologist, Drexel University
Dan Savercool, Senior Biologist, EA Engineering, Science, and Technology, Inc. PBC
Jeannette Matkowski, Biologist, EA Engineering, Science, and Technology, Inc. PBC

Not in Attendance

David Jenkins, New Jersey Department of Environmental Protection

1. Introductions

- Brief introductions of the Integrated Natural Resources Management Plan (INRMP) Team were exchanged.
- Ms. Matkowski lead the discussion based on a Power Point presentation (attached).

2. Authority

- The Sikes Act requires DOD installations with significant natural resources requiring conservation and management to have an INRMP. The triggers for the Warren Grove Range INRMP include the presence of one federally-listed and 45 state listed species on the installation, wetlands, and the unique Pine Barrens habitat.

3. Purpose of INRMP Task Force Meeting

- INRMPs must be signed by the Regional Director of the USFWS (authority at the local field office), state fish and game agency (New Jersey Department of Environmental Protection [DEP]), and the Installation Commander.
- The purpose of the Task Force meeting is to include agencies from the beginning of the INRMP process so the agencies are comfortable with the document which will allow the signature process to go quick and smoothly.

4. Office of Pinelands Research, Drexel University

- Dr. Bien, director of the Office of Pinelands Research gave a brief presentation on the accomplishments of the ongoing research and studies at Warren Grove Range. He also discussed all the public outreach and partnerships that have been involved in the studies.

5. Review and Discussion of INRMP Management Concerns, Goals, and Objectives

- During the development of the INRMP, the project team needs to keep in mind that Warren Grove Range is a military installation with a distinct purpose and mission. While managing natural resources, we cannot deviate from the military mission; however, knowing this ahead of time gives us an advantage while managing the natural resources.
- The 2011 Warren Grove Range INRMP will be revised to meet the requirements outlined in AFI-32-7064, *Integrated Natural Resources Management* which was revised in 2014.

- The INRMP team went through the list of management areas that would be included in the INRMP. For each management area, the team discussed how the resource is currently being managed, what projects have been completed to date, and identified new management goals/projects that should be identified in the 2016 INRMP.
- Atlantic City ANGB and Coyle Field should be addressed in the 2016 INRMP.

Natural Resources Management

- Warren Grove Range does not have a Natural Resources Manager. Rich DeFeo is the Environmental Manager for Atlantic City National Guard and spends a small portion of his time managing the natural resources program at Warren Grove Range. Major DeFeo and the ANG Natural Resources Program Manager (Melanie Frisch) co-share the natural resources management duties at Warren Grove Range. Hiring a Natural Resources Manager for Warren Grove Range should continue to be included as a goal in the 2016 INRMP.
- The 2016 INRMP should include creating a handbook that contains all surveys completed at Warren Grove Range and the results.

Fish and Wildlife Management

- Many wildlife surveys have been completed since 2011; results of the studies will be incorporated into the appropriate sections of the 2016 INRMP. Some of the studies will be available as Component Plans or Appendices to the 2016 document.
- Warren Grove Range currently has a hunting program that is managed by range staff. Hunters receive a safety briefing prior to any activity. Hunting is part of the Trespass Program. The INRMP will include a discussion on the elements that make up the Trespass Program.

Outdoor Recreation and Public Access to Natural Resources

- Warren Grove Range staff try to make the installation as open as possible, but due to the mission all outdoor recreation is controlled.
- Under the Trespass Program, active and retired military in addition to their family can gain access to the range to hike, mountain bike, hunt, etc. This program was approved in 2012.
- A nature pavilion, which contains research story boards and bleachers for airplane observation is located just past the entrance gate.
- Offer Boy Scout, school group, and Earth Week programs.

Conservation Law Enforcement

- The 2016 INRMP will include a conservation law enforcement project for the development of a Memorandum of Understanding with the State Fish and Game Warden for enforcement of New Jersey's deer hunting program at Warren Grove Range.
- The issue of poaching snakes and orchids in the Pinelands should be discussed in the MOU.

Management of Threatened and Endangered Species and Habitats

- Federally-listed Kneiskern's beaked rush and 45 state listed species occur at Warren Grove Range.
- The posting of listed species warning/avoidance signs should be deleted as a project in the INRMP as such posting specifically locates the species to be protected.
- The 2016 INRMP should include a project for training grounds maintenance personnel of where and when mowing can/cannot occur. Details on mowing methods should also be included.
- The USFWS indicated that work on Warren Grove Range has been very helpful in managing species and recovery in New Jersey. They would like to see the range continue to pursue Kneiskern's beaked rush monitoring and research. The Jersey Central Power &

Light (JCP&L) powerline project will be impacting Kneiskern's beaked rush and the USFWS is requiring \$34,000 in mitigation to help with recovery efforts. The USFWS would like this money to go to the range for Kneiskern's beaked rush recovery efforts. There is need to learn more about shading and canopy closure of Kneiskern's beaked rush and seed sowing and habitat improvements to get the best success of recovery. Recovery efforts completed at Warren Grove Range must not negatively affect the range mission.

- The northern long-eared bat 4(d) rule allows flexibility in addressing the species. The biological opinion allows incidental take of the species. The rule does not allow the removal of known roost trees from June through July and any activity in hibernacula areas need to be coordinated with the USFWS. The 2016 INRMP should include a bat survey at Warren Grove Range that will include acoustic surveys and mist netting. The USFWS stated that there is a documented protocol describing the minimum criteria for documenting the presence/absence of the listed bat species. Coordination with the local USFWS should occur to ensure the surveys meet the minimum criteria for bat surveys.
- The federally endangered American chaffseed has the potential to occur at Warren Grove Range, but has not been documented. There is currently only one population on the northeast coast and that is in New Jersey. To assist in recovery efforts for this species, the USFWS stated that there could be an opportunity for Warren Grove Range to establish a population on the range because there is really good habitat available and the species is managed through prescribed burns. USFWS will submit this in writing to Melanie Frisch and Rich DeFeo.
- Hirst Brothers' panic grass is a candidate species that the USFWS will make a listing determination and designate critical habitat in the fall of 2016. This species can be challenging to identify and habitat for the species does occur on the range.
- USFWS is currently reviewing 16-18 species to see if they should be listed within the next seven years. The USFWS has the list of candidate species and Warren Grove Range could do a survey to see if any of the species currently occur on the range. During listing, USFWS takes into consideration current conservation efforts and will send out a request for information and conservation efforts.
- The USFWS 1981 Mitigation Policy is being revised and will now incorporate endangered species. This will be finalized in November 2016. The USFWS will send a copy of this document for the ANG to consider for inclusion into the 2016 INRMP Update.

Water Resource Protection

- Findings of results from all studies should be presented to Warren Grove Range staff so they are educated on the resources at the range. This should be incorporated into each resource management area.
- The 2016 INRMP should include developing an Erosion and Sediment Best management practices overview training for staff.
- Waterbodies at the range near known areas of sensitive herpetofauna should be monitored using the NJ Pinelands Commission water quality criteria for pH, conductivity, etc.

Wetland Protection

- Consultation with the New Jersey Pinelands Commission should occur during construction/development activities. Permits are also required from the New Jersey Pinelands Commission. Jurisdictional determinations should come from the Commission as they override the New Jersey DEP wetland definition. Wetland delineations at Warren Grove Range should follow the New Jersey Pinelands Commission's Guide to Delineating Wetlands in Pinelands. Language concerning the New Jersey Pinelands Commission in the 2016 INRMP should be reviewed by NGB Legal. Warren Grove Range will be good stewards of the environment.

- The New Jersey Pinelands Commission will send the Memorandum of Understanding with the New Jersey DEP in regulating wetlands and the Comprehensive Management Plan.

Grounds Maintenance

- Future landscaping projects on the installation should include planting native grasses as opposed to planting non-native ornamentals.
- Comment was made that the 2016 INRMP should include a mowing schedule focusing on the recommendations from the Rare Plant Monitoring Report. This recommendation will be evaluated.

Forest Management

- A project should be considered for inclusion into the 2016 INRMP Update for a study on the regrowth of pines in the helicopter barren area. Previously, regrowth studies have been successful at Warren Grove Range. Studying the success will help to regrow other areas on the range when required or needed (i.e. new site lines are cut and old ones need to be restored).
- A possible project for the 2016 INRMP update should include identifying areas where forested areas may need to be restored.
- All of the current goals in the 2011 INRMP should be moved to Wildland Fire Management – clear-cut project, seed bank survey for big sedge, and cryptogram study.

Wildland Fire Management

- Each year one designated block area is burned and the areas are rotated. Therefore, based on what studies have shown, each burn block around the impact area is burned approximately every 5 to 7 years. The frequency of burns for buffer areas is longer.
- Developing a grounds fuel model to target areas for prescribed burns and updating the descriptions of the Fire Management units should be combined as one goal in the 2016 INRMP.
- The East Plains Regional Fire Management Plan was never written. The 2016 INRMP should explain what happened to this Plan and why it never happened.
- The 2016 INRMP should include a project for revising/updating the Wildland Fire Management Plan.
- The 2016 INRMP should include a description as to why developing a smoke management plan and protecting buffer areas is unnecessary at Warren Grove Range.

Agricultural Outleasing

- There are no agricultural outleases at Warren Grove Range.

Integrated Pest Management Program

- The Integrated Pest Management Plan under the Atlantic City ANGB and is outdated. Coyle Field and Warren Grove are described in the plan, but it does not identify pest management strategies for these sites. This plan should be revised/updated to include Warren Grove Range and Coyle Field.
- Eradication of phragmites should be removed from the INRMP. This was a goal in the 2011 INRMP to control and minimize invasive species.

Bird/Aircraft Strike Hazard (BASH)

- The Base Operations/Safety Office implements the BASH Program at the range. A4AM plans to coordinate with the Safety Office to support the implementation of the BASH Plan. This should be an identified goal in the 2016 INRMP. Other goals/projects in the 2016 INRMP should clearly state that the Safety Office is responsible for funding these projects.
- Currently, Warren Grove Range participates in BASH meetings.

- The 2016 INRMP should include updating the species identification chart and disseminating it to staff and pilots for educational purposes. U.S. Department of Agriculture Wildlife Services are assigned to military airfields to address birds and other wildlife that pose a threat to airplanes.

Coastal Zone and Marine Resources

- There is no coastal or marine habitat at Warren Grove Range.

Cultural Resource Protection

- Goals and objectives associated with cultural resources will be addressed through the ANG Cultural Resources Management Program.

Public Outreach

- Preparation for public review and comment regarding the 2016 INRMP Update should involve the Atlantic City ANGB public affairs office to ensure installation needs are met and to allow for digital access during the public review period.
- The 2016 INRMP should include evaluating the existing pamphlet regarding the surveys and natural resource projects at Warren Grove Range to determine what revisions are needed. The pamphlet should be then updated.
- The current website is being hosted by Drexel University. A project to be included in the 2016 INRMP Update is to identify in cooperation with VEMO personnel a location that can house the current website so that it is available to the public. A second project would be after the website is up and running all of the projects completed or ongoing be uploaded to the website.
- The 2016 INRMP should include descriptions of all public initiatives – school groups, boy scouts, hunting, etc.

Geographic Information Systems

- The 2016 INRMP should include developing/implementing a GIS product in a useable form that staff can access. Coordination with the Manager of the ANG GeoBase Program will need to be consulted and worked with to attain this goal.

6. INRMP Schedule

- The draft INRMP will be available for review by ANG and Warren Grove Range by the end of July. There will be a 30 day review period.
- The Final Draft INRMP will be available for agency review at the end of September. This will be a 45 day review. The 10 step process written in AFI 32-7064 will be followed for agency consultation.
- The document will be available for a 30-day public review period.
- The Final INRMP will be sent out in March 2017 for signature from the USFWS, New Jersey DEP, and the Installation Commander.

The INRMP Task Force meeting concluded at 1500.

Melanie Frisch
Natural Resources Program Manager

Date

PHOTOGRAPHIC RECORD

Warren Grove Range
May 19, 2016



Visitor Center and aircraft viewing area



1,000 acre impact area

Warren Grove Bombing Range

INRMP Task Force Meeting

Meeting Attendees

19 May 2016

<p>Name: Mebnie Frisch Title: ANR Natural Resources Mgr Representing: ANR Address: 3501 Patches Avenue Joint Base Andrews, MD Phone: 240-612-8427 e-mail: mebnie.a.frisch.civ@mail.mil</p>	<p>Name: Richard Defeo Title: Environmental manager Representing: WGR Address: 400 Langley Rd Egg Harbor Township NJ 08234 Phone: 609-761-6303 e-mail: richard.l.defeo.mil@mail.mil</p>
<p>Name: MSgt Michael Mumber Title: Warren Grove Range C.E. Representing: Address: 150 Bombing Range Rd. Warren Grove, NJ 08005 Phone: 609 761 6717 e-mail: Michael.R.Mumber.mil@mail.mil</p>	<p>Name: Jeannette Matkowski Title: Biologist Representing: EA Engineering Address: 225 Schilling Circle Hunt Valley, MD Phone: 410-584-7000 e-mail: jematkowski@eaest.com</p>
<p>Name: DAN SAVERCOOL Title: SR. SCIENTIST Representing: EA Engineering Address: 225 Schilling Circle, Ste 400 Hunt Valley, MD Phone: 240.793.5455 e-mail: dsavercool@eaest.com</p>	<p>Name: Rhonda Ward Title: Environmental Specialist Representing: NJ Pinelands Commission Address: PO Box 359 New Lisbon, NJ 08064 Phone: 609-894-7300 e-mail: rhonda.ward@njpinelands.state.nj.us</p>

Warren Grove Bombing Range

INRMP Task Force Meeting

Meeting Attendees

19 May 2016

<p>Name: CARLO POPOLIZIO Title: Biologist Representing: USFWS - NJFO Address: 4 E. Jimmie Lewis Rd Gallwey Phone: (609) 382-5271 e-mail: CARLO_POPOLIZIO@FWS.GOV</p>	<p>Name: DAVE WARD Title: Biologist Representing: Drexel University Address: 3245 Chestnut St Philadelphia PA 19104 Phone: 215-555-4367 e-mail: dcw33@drexel.edu</p>
<p>Name: Jeremy Markkoon Title: Biologist Representing: USFWS - NJFO Address: 4 E. Jimmie Lewis Rd. Gallwey NJ Phone: 609-382-5266 e-mail: jeremy jeremy-markkoon@fws.gov</p>	<p>Name: Kim Laidig Title: Research Scientist Representing: NJ Pinelands Commission Address: 15 Springfield Rd. New Lisbon, NJ 08064 Phone: (609) 894-7300 e-mail: Kim.Laidig@nj.pines.state.nj.us</p>
<p>Name: WALTER BIEN Title: DREXEL UNIVERSITY LAB OF PINELANDS, DIRECTOR Representing: Address: Phone: 215 514 8011 (cell) e-mail: wbien205@COMCAST.NET</p>	<p>Name: Marilyn Sobel Title: Biologist Representing: Laboratory of Pinelands Research Address: 3245 Chestnut Street Philadelphia, PA 19104 Phone: 215-895-2874 e-mail: mcs57@drexel.edu</p>



Warren Grove Bombing Range

2016 Integrated Natural Resources Management Plan Revision (INRMP)



Meeting Agenda

- Introductions
- Authority
- Purpose of INRMP Task Force Meeting
- Review and Discussion of INRMP Management Concerns, Goals, and Objectives
- Additional Agency Comments
- Conclusion

Authority

- The ANG will revise the 2011 INRMP for Warren Grove Bombing Range (WGR), New Jersey in accordance with the provisions of the Sikes Act (16 U.S.C. 670a et seq.), AFI 32-7064, Integrated Natural Resources Management; AFPD 32-70, Environmental Quality; and DODI 4715.03, Natural Resources Conservation Program.
- An INRMP is required for installations having significant natural resources requiring conservation and management as determined by the installations ANG Natural Resources Program Manager in consultation with US Fish and Wildlife Service (USFWS) and the state fish and wildlife agency. When the installation includes or borders marine environments, consultation must also include the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS).
- The Sikes Act also requires that INRMPs be reviewed as to operation and effect at least once every five years in coordination with state and federal agencies and revised as necessary. The WGR INRMP was prepared in 2001, and revised in 2007 and 2011.

Purpose of INRMP Task Force Meeting

- Review and discuss pertinent management topics of concern identified during the development of the Draft INRMP
- Discuss types of natural resources management projects and identify strategies for implementation
- Coordination of INRMP review and approval process with U.S. Fish and Wildlife Service (USFWS) and New Jersey Department of Environmental Protection (DEP)
- Continue coordination with the New Jersey Pinelands Commission

Overview

- AFI 32-7064, *Integrated Natural Resources Management* was revised in November of 2014. The 2011 WGR INRMP will be revised accordingly to meet the new requirements.
- Review and Discussion of Current and Future INRMP Management Goals and Objectives
 - Natural Resources Program Management
 - Fish and Wildlife Management
 - Outdoor Recreation and Public Access to Natural Resources
 - Conservation Law Enforcement
 - Management of Threatened and Endangered Species and Habitats
 - Water Resource Protection
 - Wetland Protection
 - Grounds Maintenance
 - Forest Management
 - Wildland Fire Management
 - Agricultural Outleasing
 - Integrated Pest management Program
 - Bird/Wildlife Aircraft Strike Hazard (BASH)
 - Coastal Zone and Marine Resource Management
 - Cultural Resource Protection
 - Public Outreach
 - Geographic Information System (GIS)

Natural Resources Program Management

Manage natural resources in a manner that is compatible with and supports the military mission while complying with federal, state, and USAF laws and regulations.

- **Current Goals Include:**
 - Preparing budget to implement INRMP
 - Annual reviews of INRMP
 - INRMP revision
 - Hire a Natural Resources Manager
 - Prepare education materials
- **Additional Future Goals??**

Fish and Wildlife Management

Maintain and restore natural habitat favorable for indigenous fish and wildlife consistent with the mission and applicable laws and regulations.

- **Current Goals Include:**
 - List surveys/monitoring efforts completed since 2001 for amphibians, fish, insects, tiger beetles, and Lepidoptera
 - Determine suitability of a deer hunting program with appropriate staff and state fish and wildlife agency
- **Additional Future Goals??**

Outdoor Recreation and Public Access to Natural Resources

Limited outdoor recreation opportunities exist due to the dangers associated with the air-to-ground mission.

- **Current Goals Include:**
 - Provide outdoor recreation opportunities that do not conflict with sustainable ecosystem management, military mission, or safety of WGR users
- **Additional Future Goals??**

Conservation Law Enforcement

There is currently no conservation law enforcement program at WGR.

- **Future Goals??**
 - Work with the local (state) fish and wildlife management office to determine if an agreement can be reached to have them “police” the installation.

Management of Threatened and Endangered Species and Habitats

Federal and state listed species occur at WGR.

- **Federal** – Knieskern’s beaked rush
- **State** – 45 Species. Priority species include:
 - broom crowberry, Pine Barren gentian, timber rattlesnake, northern pine snake, and Pine Barrens tree frog



Management of Threatened and Endangered Species and Habitats

- **Current Goals Include:**
 - Avoid changing land use in areas containing Knieskern’s beaked rush
 - Listed Species warning signs
 - Impact analysis when new activities occur
 - Monitor listed species populations
 - Research on Knieskern’s beaked rush
 - Participate in NJDEP updates to rare ecological community mapping/stewardship planning for East Plains Fireshed
 - Water quality studies near sensitive herp populations

Management of Threatened and Endangered Species and Habitats

- **Current Goals continued:**
 - Research on insect pollinators essential for some rare plants
 - Research on habitat requirements for rare snake hibernacula
 - Research on birthing locations, movement patterns, and habitat use of timber rattlesnake
 - Pine snake nesting survey and model to preserve migration routes
 - Coordinate rare species data with NJDEP Natural Heritage Database
- **Additional Future Goals??**

Water Resource Protection

Streams, rivers, and ponds at WGR are managed through conservation and impact avoidance.

- **Current Goals Include:**
 - Revegetate exposed soils
 - Ensure erosion and sediment control measures are effective
 - Train staff in erosion and sediment BMPs
 - Screen waterbodies for impacts following storms
 - Monitor waterbodies annually
- **Additional Future Goals??**

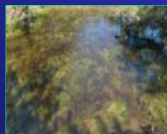
Wetland Protection

Maintain wetlands and vernal pools so they remain resilient, functional, and have no net loss of wetlands.

- **Current Goals Include:**
 - Coordinate with NJDEP if wetland impacts may occur
 - Provide educational training on wetlands
 - Maintain and improve wetlands database
 - Conduct wetland delineations and landscape assessment, identify historical changes in wetlands

Wetland Protection

- **Current Goals continued:**
 - Evaluate Atlantic white cedar wetlands for impacts from hardwoods and deer
 - Evaluate impacts from stormwater management on wetland areas
- **Additional Future Goals??**



Grounds Maintenance

Grounds maintenance helps to maintain and improve the aesthetic appearance of lands controlled by the ANG and can contribute to overall biodiversity and ecosystem health.

- **Current Goals Include:**
 - Mowing fields in fall to maximize seed dispersal
 - Avoid herpetofauna along roads during maintenance activities
 - Native plant species for landscaping
 - Maintain existing roads and firebreaks and remove brush from road edge shoulders
- **Additional Future Goals??**

Forest Management

There is no income-generating forestry program at WGR; however, WGR manages vegetation to maintain pine plains and other habitats.

- **Current Goals Include:**
 - Conduct flora and vegetation community surveys
 - Research on early blooming plants and climate change
 - Research pollinator success of sensitive plants
 - Design and identify areas in need of upland vegetation restoration

Forest Management

- **Current Goals continued:**
 - Clearcut to remove all pine except pitch pine (after forestry survey)
 - Conduct cryptograms study
 - Conduct seed bank survey
- **Additional Future Goals??**



Wildland Fire Management

Management of wildland fires is important to the ecological integrity and the to the priorities of the operational mission. Prescribed fires are necessary for maintaining vegetation diversity and the Pine Barrens community.

- **Current Goals Include:**
 - Participate in East Plains Regional Fireshed Management Plan
 - Implement Wildland Fire Management Plan
 - Maintain a fire log
 - Develop smoke management plan
 - Protect buffer areas during prescribed burns

Wildland Fire Management

- **Current Goals continued:**
 - Develop a grounds fuel model to target areas for prescribed burns
 - Evaluate vegetation impacts from fire management every 5 years
 - Conduct studies to determine impacts from fire on wetlands, plowlines on soils, soil characteristics, and habitat fragmentation
 - Conduct prescribed burns
 - Update descriptions of Fire Management units
- **Additional Future Goals??**



Agricultural Outleasing

There are no leases at WGR.

Integrated Pest Management

Utilize non-chemical procedures to control pests, including both invasive and exotic plant and animal species.

- **Current Goals Include:**
 - Implement the IPM Plan
 - Monitor Southern pine beetle and coordinate suppression activities including prescribed fire
 - Monitor and control priority invasive species
 - Monitor for new invasive species
 - Eradicate phragmites



Integrated Pest Management

- **Current Goals Include:**
 - Monitor the length of time it takes for native species to establish following treatment
 - Study changes in invasive populations at disturbed sites
 - Test effects of prescribed burning on non native invaders
 - Conduct studies focused on soil mechanisms in disturbed sites
 - Survey various habitats to determine insect species and which habitats support invasive species
- **Additional Future Goals??**

Bird/Wildlife Aircraft Strike Hazard (BASH)

The 177FW actively implements a BASH Plan to reduce the potential for a bird strike to occur at WGR.

- **Current Goals Include:**
 - Implement BASH Plan
 - Modify management strategies if BASH risk increase or if high BASH risk species increase
- **Additional Future Goals??**



Coastal Zone and Marine Resources Management

There is no coastal or marine habitat at WGR.

Cultural Resource Protection

An Integrated Cultural Resource Management Plan (ICRMP) has been prepared for WGR. Cultural resource protection will be addressed through the ANG Cultural Resources Management Program.

Public Outreach

Public outreach is an essential tool for natural resource management at WGR.

- **Current Goals Include:**
 - Continue WGR Community Council meetings
 - Continue events to utilize the air-to-ground target viewing area
 - Promote resource management and achievements within the community through public affairs office
- **Additional Future Goals??**

Geographic Information System (GIS)

Complete and usable GIS data and access to software is essential for natural resource management.

- **Current Goals Include:**
 - Provide GIS access/products to WGR staff
 - Incorporate existing GIS data into one GIS dataset with metadata
 - Assemble missing GIS data
 - Build GIS data for known locations of invasive species
- **Additional Future Goals??**

INRMP Schedule

- Draft INRMP
 - July 2016
 - 30 day review for WGR and ANG
- Final Draft INRMP
 - September 2016
 - 45 day review for agencies
- 30-day public Review Period
 - February 2017
- Final INRMP/EA
 - March 2017 (current INRMP will be non-compliant)
 - Final Coordination with agencies

Questions?



NATIONAL GUARD BUREAU

3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

30 April 2018

Dave Jenkins
New Jersey Department of Environmental Protection
Division of Fish and Wildlife
Mail Code 501-03
PO Box 420
501 East State Street
3rd Floor
Trenton, NJ 08625-0420

Subject: Review of the Draft Final Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Mr. Jenkins:

The Warren Grove Bombing Range and the Air National Guard (ANG) would like to thank the New Jersey Department of Environmental Protection for its involvement and coordination in the update of the Warren Grove Bombing Range Integrated Natural Resources Management Plan (INRMP).

The U.S. Fish and Wildlife Service has also been involved in the development of this document. The federal and state coordination during the development of an INRMP is a requirement of the Sikes Act Improvement Act (SAIA) of 1997. As required by Title 16 U.S.C. §670a(a)(2), the Warren Grove Bombing Range INRMP "shall reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources." The Warren Grove Bombing Range is currently in the draft final stage of the INRMP update process. At this time, we are soliciting New Jersey Department of Environmental Protection comments on the draft final INRMP update.

Please review the Warren Grove Bombing Range INRMP update within 30 days of receiving this document. We request that you submit comments using the Comment Response Matrix attached. Comments can be emailed to melanie.a.frisch.civ@mail.mil or mailed to:

Melanie Frisch
NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

Should you have any questions or concerns regarding the INRMP, please contact me at (240) 612-8427 or by email at melanie.a.frisch.civ@mail.mil to discuss.

Sincerely,

Melanie A. Frisch
NGB/A4AM
ANG Natural Resources Program Manager



NATIONAL GUARD BUREAU

3501 FETCHET AVENUE

JOINT BASE ANDREWS MD 20762-5157

30 April 2018

Kim J. Laidig
Principal Research Scientist
Pinelands Commission
P. O. Box 359
15 Springfield Road
New Lisbon, NJ 08064

Subject: Review of the Draft Final Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Ms. Laidig:

The Warren Grove Bombing Range and the Air National Guard (ANG) would like to thank the New Jersey Pinelands Commission for its involvement and coordination in the update of the Warren Grove Bombing Range Integrated Natural Resources Management Plan (INRMP).

The New Jersey Department of Environmental Protection and U.S. Fish and Wildlife Service has also been involved in the development of this document. The federal and state coordination during the development of an INRMP is a requirement of the Sikes Act Improvement Act (SAIA) of 1997. As required by Title 16 U.S.C. §670a(a)(2), the Warren Grove Bombing Range INRMP “shall reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.” The Warren Grove Bombing Range is currently in the draft final stage of the INRMP update process. At this time, we are soliciting New Jersey Pinelands Commission comments on the draft final INRMP update.

Please review the Warren Grove Bombing Range INRMP update within 30 days of receiving this document. We request that you submit comments using the Comment Response Matrix attached. Comments can be emailed to melanie.a.frisch.civ@mail.mil or mailed to:

Melanie Frisch
NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

Should you have any questions or concerns regarding the INRMP, please contact me at (240) 612-8427 or by email at melanie.a.frisch.civ@mail.mil to discuss.

Sincerely,

Melanie A. Frisch
NGB/A4AM
ANG Natural Resources Program Manager



NATIONAL GUARD BUREAU

3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

30 April 2018

Carlo Popolizio
U.S. Fish and Wildlife Service
New Jersey Field Office
4 East Jimmie Leeds Road, Unit 4
Galloway, New Jersey 08205-4465

Subject: Review of the Draft Final Integrated Natural Resources Management Plan (INRMP) Update for Warren Grove Bombing Range, New Jersey

Dear Mr. Popolizio:

The Warren Grove Bombing Range and the Air National Guard (ANG) would like to thank the U.S. Fish and Wildlife Service for its involvement and coordination in the update of the Warren Grove Bombing Range Integrated Natural Resources Management Plan (INRMP).

The New Jersey Department of Environmental Protection has also been involved in the development of this document. The federal and state coordination during the development of an INRMP is a requirement of the Sikes Act Improvement Act (SAIA) of 1997. As required by Title 16 U.S.C. §670a(a)(2), the Warren Grove Bombing Range INRMP “shall reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.” The Warren Grove Bombing Range is currently in the draft final stage of the INRMP update process. At this time, we are soliciting U.S. Fish and Wildlife Service comments on the draft final INRMP update.

Please review the Warren Grove Bombing Range INRMP update within 30 days of receiving this document. We request that you submit comments using the Comment Response Matrix attached. Comments can be emailed to melanie.a.frisch.civ@mail.mil or mailed to:

Melanie Frisch
NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

Should you have any questions or concerns regarding the INRMP, please contact me at (240) 612-8427 or by email at melanie.a.frisch.civ@mail.mil to discuss.

Sincerely,

Melanie A. Frisch
NGB/A4AM
ANG Natural Resources Program Manager



In Reply Refer To:
18-CPA-0229

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Jersey Field Office
4 East Jimmie Leeds Road, Suite 4
Galloway, New Jersey 08205
Tel: 609/646 9310

<http://www.fws.gov/northeast/njfieldoffice>



Melanie Frisch, Natural Resources Program Manager
NGB/A4AM
3501 Fetchet Avenue
Joint Base Andrews, Maryland 20762

JUN 13 2018

Dear Ms. Frisch:

The U.S. Fish and Wildlife Service (Service) has reviewed the April 2018 *Draft Final Integrated Natural Resources Management Plan for the 177th Fighter Wing, Warren Grove Bombing Range, Coyle Field, and Atlantic City Air Natural Guard Base, New Jersey (INRMP)* and provides the following comments.

AUTHORITY

The following Service comments are provided pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), Sikes Act of 1960 (74 Stat. 1052; 16 U.S.C. 670a *et seq.*), and National Environmental Policy Act (83 Stat. 852; 42 U.S.C. 4321 *et seq.*). These comments do not preclude separate review and comment by the Service, if specific activities require Federal or State permits, or consultation.

SERVICE REVIEW

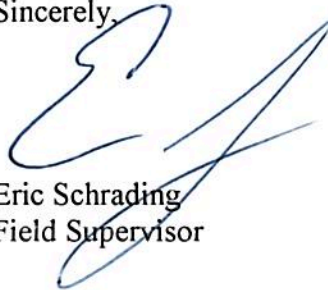
The Service requests clarifications on proposed management of the federally listed (threatened) Knieskern's beaked-rush (*Rhynchospora knieskernii*). According to Bien and Sobel (2015), Knieskern's beaked-rush thrived best under prescribed burns conducted once every 6 to 10 years. A 6 to 10 year fire return interval was found to facilitate seed bank development, population growth, and sufficient time for litter buildup for nutrient release following fire. More frequent prescribed burns were found to adversely affect Knieskern's beaked-rush. Longer fire return intervals were found to increase canopy closure and light reduction, which would also adversely affect this federally protected species.

In the INRMP, under recurring and non-recurring conservation requirements, a level 3 (low) priority was assigned to management actions supporting the occurrences of Knieskern's beaked-rush. It is unclear if a level 3 priority corresponds to implementing prescribed burns

every 6-10 year or if this management action would be better implemented under a level 2 (medium) priority. The Service requests that burns prescribed every 6-10 years in support of Knieskern's beaked-rush be clearly highlighted in the proposed management actions of the INRMP along with the appropriately assigned level of priority.

Please contact Carlo Popolizio at (609) 382-5271, if you have any questions or require assistance regarding fish and wildlife or botanical resources.

Sincerely,



Eric Schradung
Field Supervisor

REFERENCE

Bien, W.F. and M. Sobel. 2015. Ecological Studies in Support of the Warren Grove Gunnery Range Integrated Natural Resources Management Plan. Microhabitat requirements and Role of Disturbance on Knieskern's Beaked-Rush (*Rhynchospora knieskernii*) at the Warren Grove Range, New Jersey. Laboratory of Pinelands Research, Drexel University, Office of Research and Graduate Studies, Philadelphia, Pennsylvania. 132 pp.

From: Montgomerie, Jean <Jean.Montgomerie@pinelands.nj.gov>
Sent: Monday, August 6, 2018 8:48 AM
To: Frisch, Melanie A CIV USAF NGB A7 (US) <melanie.a.frisch.civ@mail.mil>
Subject: [Non-DoD Source] WGR Draft Final INRMP dated 30 April 2018

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Dear Ms. Frisch:

I apologize for the late response; additionally, I do not have the Comment Response Matrix in electronic form or your original email from April 2018.

Reviewer Name: Jean Montgomerie
Organization: NJ Pinelands Commission, Regulatory Programs Office
609-894-7300 x105
PO Box 359
New Lisbon, NJ 08064
Jean.Montgomerie@pinelands.nj.gov < Caution-mailto:Jean.Montgomerie@pinelands.nj.gov >

Comment #1: A review of Coyle Field aerial photos reveals that a 1/3 acre paved parking lot with 400 foot access drive was constructed sometime prior to 2008
Across Route 72 from the main airstrip and facilities. Was any EIA or noticing completed for this project? What is the parking area for?

Comment#2: page7-6, Management of T&E species and habitats: "No critical habitat as designated by USFWS exists on WGR...This INRMP removes the need for any critical habitat
To be designated on the lands making up WGR"... Note that critical habitat for State and Pinelands listed plant and animal species does exist on WGR.

Comment#3: page 5-20, Wetlands: Note that While the Buffer Delineation Model for the New Jersey Pinelands Wetlands exists for requesting a buffer reduction in the Pinelands, the standard wetlands Buffer in the Pinelands is 300 feet, and a 300 foot buffer will be required for all wetlands on WGR as WGR (and Coyle Field) is located within the Pinelands Preservation Area District. Only small isolated wetlands
which are very degraded by adjacent development and disturbance may qualify for a wetland buffer reduction.

Thank you for allowing the Pinelands Commission to comment on this INRMP.

Jean Montgomerie
Environmental Specialist
NJ Pinelands Commission
PO Box 359, New Lisbon NJ 08064
609-894-7300 Extension 105

CONFIDENTIALITY NOTICE:

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If you are not an intended recipient of this email, the dissemination, distribution, copying or use of the

information it contains is strictly prohibited.

If you have received this communication in error, please immediately contact the Pinelands Commission at 609-894-7300 to arrange for the return of this information.

From: Davis, Kelly <Kelly.Davis@dep.nj.gov>
Sent: Tuesday, August 7, 2018 3:45 PM
To: Matkowski, Jeannette; Heilferty, John
Cc: Frisch, Melanie A CIV USAF NGB A7 (US)
Subject: Re: Warren Grove INRMP

All,
Sorry, I thought this had been signed and sent.
No specific changes or comments for species under our purview.
Signature page should be sent shortly.
Kelly

Kelly Davis, Biologist - Fisheries
N.J. Division of Fish and Wildlife - Office of Env. Review
P.O. Box 394, 1255 County Rt. 629
Lebanon, NJ 08833
Tel: (908) 236-2118
kelly.davis@dep.nj.gov

Appendix D

Annotated Summary of Key Legislation

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ANNOTATED SUMMARY OF KEY LEGISLATION

Federal Public Laws and Executive Orders	
<i>National Defense Authorization Act of 1989, Public Law (P.L.) 101-189; Volunteer Partnership Cost-Share Program</i>	Amends two acts and establishes volunteer and partnership programs for natural and cultural resources management on Department of Defense (DOD) lands.
<i>Defense Appropriations Act of 1991, P.L. 101-511; Legacy Resource Management Program</i>	Establishes a program for the stewardship of biological, geophysical, cultural, and historic resources on DOD lands.
<i>Executive Order (EO) 11988, Floodplain Management</i>	Provides direction regarding actions of federal agencies in floodplains, and requires permits from state and federal review agencies for any construction within a 100-year floodplain.
<i>EO 11990, Protection of Wetlands</i>	Requires federal agencies to avoid undertaking or providing assistance for new construction in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands have been implemented.
<i>EO 11514, Protection and Enhancement of Environmental Quality</i>	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment.
<i>EO 11593, Protection and Enhancement of the Cultural Environment</i>	All federal agencies are required to locate, identify, and record all cultural resources. Cultural resources include sites of archaeological, historical, or architectural significance.
<i>EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds</i>	The United States Fish and Wildlife Service has the responsibility to administer, oversee, and enforce the conservation provisions of the Migratory Bird Treaty Act, which includes responsibility for population management (e.g., monitoring), habitat protection (e.g., acquisition, enhancement, and modification), international coordination, and regulations development and enforcement.
<i>EO 11987, Exotic Organisms</i>	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters that they administer.
<i>EO 12088, Federal Compliance With Pollution Control Standards</i>	This EO delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the United States Environmental Protection Agency (EPA) authority to conduct reviews and inspections to monitor federal facility compliance with pollution control standards.
<i>EO 12898, Environmental Justice</i>	This EO requires certain federal agencies, including the DOD, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
<i>EO 13112, Exotic and Invasive Species</i>	To prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.
<i>EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds</i>	Directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act.
<i>EO 13352, Facilitation of Cooperative Conservation</i>	To ensure that the Departments of the Interior, Agriculture, Commerce, and Defense EPA implement laws relating to the environment and natural resources in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in federal decision-making, in accordance with their respective agency missions, policies, and regulations.

ANNOTATED SUMMARY OF KEY LEGISLATION

Federal Public Laws and Executive Orders	
<i>EO 13045, Protection of Children from Environmental Health and Safety Risks</i>	This EO makes it a high priority to identify and assess environmental health and safety risks that could disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
<i>EO 13443, Facilitation of Hunting Heritage and Wildlife Conservation</i>	The purpose of this EO is to direct federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and United States Department of Agriculture to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.
United States Codes	
<i>National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 United States Code (U.S.C.) 4321 et seq.</i>	Requires federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. Establishes the use of environmental impact statements. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts on the environment.
<i>Council on Environmental Quality Regulations for Implementing NEPA; 40 Code of Federal Regulation Parts 1500–1508</i>	Provides regulations applicable to and binding on all federal agencies for implementing the procedural provisions of NEPA, as amended.
<i>Conservation Programs on Military Installations (Sikes Act), as amended; P.L. 86-797, 16 U.S.C. 670(a) et seq.</i>	Requires federal military installations with adequate wildlife habitat to implement cooperative agreements with other agencies and develop long range Integrated Natural Resources Management Plans. Thereby, it is appropriate to manage natural resources for multipurpose uses and provide the public access to those uses to the extent consistent with the military mission. The act also sets guidelines for the collection of fees for the use of natural resources such as hunting and fishing.
<i>Leases: Non-excess Property of Military Departments, 10 U.S.C. 2667, as amended</i>	Authorizes DOD to lease to commercial enterprises federal land that is not currently needed for public use. Covers agricultural outleasing program.
<i>Federal Land Use Policy and Management Act, 43 U.S.C. 1701–1782</i>	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archeological resources and values; and to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This Act also requires consideration of commodity production such as timbering.
<i>Clean Air Act, 42 U.S.C. 7401–7671q, 14 July 1955, as amended</i>	This Act, as amended, is known as the Clean Air Act of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish federal standards for air pollutants. It is designed to improve air quality in areas of the country that does not meet federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
<i>Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251–1387</i>	The Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation’s waters. Primary authority for the implementation and enforcement rests with EPA.
<i>Migratory Bird Treaty Act 16 U.S.C. 703–712</i>	The Migratory Bird Treaty Act implements various treaties for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful without a valid permit.

ANNOTATED SUMMARY OF KEY LEGISLATION

Federal Public Laws and Executive Orders	
<i>Endangered Species Act of 1973, as amended; P.L. 93-205, 16 U.S.C. 1531 et seq.</i>	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with the United States Fish and Wildlife Service and the National Marine Fisheries Service and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
<i>National Historic Preservation Act, 16 U.S.C. 470 et seq.</i>	Requires federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. Provides for the nomination, identification (through listing on the National Register of Historic Places), and protection of historical and cultural properties of significance.
<i>Federal Noxious Weed Act of 1974, 7 U.S.C. 2801–2814</i>	The Act provides for the control and management of no indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.
<i>Plant Protection Act of 2000, Public Law 106-224, title IV</i>	The Act provides for the prevention of introduction of plant pests into the United States or the dissemination of plant pests within the United States.
<i>Federal Insecticide, Fungicide, and Rodenticide Act</i>	The Act provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by Environmental Protection Agency.
<i>Sale of certain interests in land, 10 U.S.C. 2665</i>	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.
<i>32 Code of Federal Regulation Part 989, as amended, Environmental Impact Analysis Process</i>	Provides guidance and responsibilities in the Environmental Impact Analysis Process for implementing Integrated Natural Resources Management Plans. Implementation of an Integrated Natural Resources Management Plan constitutes a major federal action and therefore is subject to evaluation through an Environmental Assessment or an Environmental Impact Statement.
DOD Policy, Directives, and Instructions	
<i>DOD Directive 4715.1, Environmental Security</i>	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This directive also ensures that environmental factors are integrated into DOD decision-making processes that could impact the environment, and are given appropriate consideration along with other relevant factors.
<i>DOD Instruction 4715.03, Natural Resources Conservation Program</i>	Implements policy, assigns responsibility, and prescribes procedures under DOD Directive 4715.1 for the integrated management of natural and cultural resources on property under DOD control.
<i>DOD Manual 4715.03, Integrated Natural Resources Management Plan</i>	Provides procedure to prepare, review, update, and implement INRMPs in compliance with the Sikes Act.
United States Air Force (USAF) Instructions and Directives	
<i>Air Force Instruction 32-7064, Integrated Natural Resources Management</i>	Implements Air Force Policy Directive (AFPD) 32-70, <i>Environmental Quality</i> ; DOD Instruction 4715.3, <i>Environmental Conservation Program</i> ; and DOD Instruction 7310.5, <i>Accounting for Sale of Forest Products</i> . It explains how to manage natural resources on USAF property in compliance with federal, state, and local standards.

ANNOTATED SUMMARY OF KEY LEGISLATION

Federal Public Laws and Executive Orders	
<i>Policy Memo for Implementation of Sikes Act Improvement Amendments, Headquarters USAF Environmental Office (USAF/ILEV) on 29 January 1999</i>	Outlines the USAF’s interpretation and explanation of the Sikes Act and Improvement Act of 1997.
<i>AFPD 32-70, Environmental Quality</i>	Outlines USAF mission to achieve and maintain environmental quality on all USAF lands by cleaning up environmental damage resulting from past activities, meeting all environmental standards applicable to present operations, planning its future activities to minimize environmental impacts, managing responsibly the irreplaceable natural and cultural resources that it holds in public trust, and eliminating pollution from its activities wherever possible. AFPD 32-70 also establishes policies to carry out these objectives.
<i>Air Force Instruction 32-7062, USAF Comprehensive Planning</i>	Provides guidance and responsibilities related to the USAF comprehensive planning process on all USAF-controlled lands.
<i>Air Force Instruction 32-7065, Cultural Resources Management</i>	This instruction implements AFPD 32-70 and DOD Directive 4710.1, Archaeological and Historic Resources Management. It explains how to manage cultural resources on USAF property in compliance with federal, state, and local standards.

Appendix E

Flora and Fauna Species List for WGR

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SPECIES LIST FOR WARREN GROVE BOMBING RANGE

All Species Lists were provided by Dr. Walter Bien at Drexel University (unless otherwise noted)

Table E-1. Species List for WGR of Non-Vascular Plants			
Phylum	Family	<i>Scientific Name</i>	Common Name
Lycopodiophyta	Lycopodiaceae	<i>Lycopodiella alopecuroides</i> (L.) Cranfill	foxtail clubmoss
		<i>Lycopodium alopecuroides</i>	
		<i>Lycopodiella appressa</i> (Chapman) Cranfill	southern clubmoss
		<i>Lycopodium adpressum</i>	
		<i>Lycopodiella caroliniana</i> (L.) Pichi Sermolli var. <i>caroliniana</i>	slender clubmoss
		<i>Lycopodium carolinianum</i>	
Bryophyta	Polytrichaceae	<i>Polytrichum commune</i> Hedw.	common hair-cap moss
		<i>Polytrichum juniperinum</i> Hedw.	juniper hair cap moss
	Sphagnaceae	<i>Sphagnum affine</i> Ren. & Card.	
		<i>Sphagnum angermanicum</i> Melin	Angerman's sphagnum
		<i>Sphagnum bartlettianum</i> Warnst.	Bartlett's sphagnum
		<i>Sphagnum carolinianum</i> Andrus	Carolina sphagnum
		<i>Sphagnum compactum</i> DC. in Lam. & DC.	
		<i>Sphagnum cuspidatum</i> Ehrh. ex Hoffm.	
		<i>Sphagnum cyclophyllum</i> Sull. & Lesq. in Sull. in Gray*	
		<i>Sphagnum fimbriatum</i> Wils. in Wils. & Hook. f. in Hook. f.	
		<i>Sphagnum flavicomans</i> (Card.) Warnst.	
		<i>Sphagnum magellanicum</i> Brid.	
		<i>Sphagnum molle</i> Sull.	
		<i>Sphagnum palasii</i>	
		<i>Sphagnum papillosum</i> Lindb.	papillose sphagnum
		<i>Sphagnum perichaetiale</i> Hampe	
		<i>Sphagnum portoricense</i> Hampe*	Puerto Rican sphagnum*
		<i>Sphagnum pulchrum</i>	
		<i>Sphagnum pylaesii</i> Brid.	Pylaes' sphagnum
		<i>Sphagnum recurvum</i> P. Beauv.	recurved sphagnum
<i>Sphagnum rubellum</i> Wils.			
<i>Sphagnum subsecundum</i> Nees in Sturm*			
<i>Sphagnum tenerum</i> Sull. & Lesq. in Sull. in Gray			

Table E-1. Species List for WGR of Non-Vascular Plants

Phylum	Family	Scientific Name	Common Name
		<i>Sphagnum torreyanum</i> Sull.	Torrey's sphagnum
Ascomycota	Cladoniaceae	<i>Cladonia arbuscula</i> (Wallr.) Hale & Culb.	Reindeer lichen
		<i>Cladonia atlantica</i> A. Evans	Broccoli
		<i>Cladonia chlorophaea</i> (Florke ex Sommerf.) Sprengel	Pyxie Cup
		<i>Cladonia coniocraea</i> auct.	Awl
		<i>Cladonia cristatella</i> Tuck.	British Soldier
		<i>Cladonia dimorphoclada</i> Robbins	
		<i>Cladonia santensis</i> Tuck.	Santee
		<i>Cladonia strepsilis</i> (Ach.) Grognot	
		<i>Cladonia subtenuis</i> (Abbayes) Hale & Culb.	Reindeer lichen
		<i>Cladonia uncialis</i> (L.) F. H. Wigg.	Rim lichen
	Lecanoraceae	<i>Lecanora strobilina</i> (Sprengel) Kieffer	
		<i>Lecanora caesiorubella</i> Ach. ssp. proliferata (Fink) R. C. Harris	
		<i>Lecanora subpallens</i>	
	Lecideaceae	<i>Placynthiella uliginosa</i> (Schrader) Coppins & P. James	Tar Lichen
		<i>Lecidea uliginosa</i>	
	Parmeliaceae	<i>Flavoparmelia caperata</i> (L.) Hale	green shield lichen
		<i>Pseudoparmelia capreolus</i>	
		<i>Imshaugia aleurites</i> (Ach.) S. F. Meyer	Imshaug's lichen
		<i>Punctelia subrudecta</i> (Nyl.) Krog	
		<i>Rimelia reticulata</i> (Taylor) Hale & Fletcher	
		<i>Rimelia subsidiosa</i> (Mull. Arg.) Hale & Fletcher	
		<i>Usnea mutabilis</i> Stirton	beard lichen
		<i>Usnea pensylvanica</i>	Pennsylvania beard lichen
		<i>Cetraria arenaria</i> Karnefelt	
		<i>Parmelia squarrosa</i> Hale	Shield Lichen
		<i>Parmelia sulcata</i> Taylor	Furrowed Shield Lichen
	Pertusariaceae	<i>Ochrolechia pseudopallescentes</i> Brodo	crabseye lichen
		<i>Parmotrema hypotropum</i> (Nyl.) Hale	
		<i>Pertusaria xanthodes</i> Mull. Arg.	pore lichen
	Physciaceae	<i>Phaeophyscia pusilloides</i> (Zahlbr.) Essl.	wreath lichen
		<i>Phaeophyscia rubropulchra</i> (Degel.) Essl.	wreath lichen
	Trapeliaceae	<i>Trapeliopsis flexuosa</i> (Fr.) Coppins & P. James	

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name	
Pteridophyta	Blechnaceae	<i>Woodwardia areolata</i> (L.) T. Moore	netted chainfern	
		<i>Woodwardia virginica</i> (L.) Sm.	Virginia chainfern	
	Dennstaedtiaceae	<i>Pteridium aquilinum</i> (L.) Kuhn var. <i>latiusculum</i> (Desv.) Underwood ex Heller	brackenfern	
		Osmundaceae	<i>Osmunda cinnamomea</i> L.	cinnamon fern
			<i>Osmunda regalis</i> L.	royal fern
		Schizaeaceae	<i>Schizaea pusilla</i> Pursh *	little curlygrass fern*
		Thelypteridaceae	<i>Thelypteris palustris</i> Schott	eastern marsh fern
Coniferophyta	Cupressaceae	<i>Chamaecyparis thyoides</i> (L.)	Atlantic white cedar	
		<i>Juniperus virginiana</i> L.**	eastern redcedar**	
	Pinaceae	<i>Pinus echinata</i> P. Mill.	shortleaf pine	
		<i>Pinus rigida</i> P. Mill.	pitch pine	
Magnoliophyta	Aceraceae	<i>Acer rubrum</i> L.	red maple	
	Alismataceae	<i>Sagittaria engelmanniana</i> J.G. Sm.	Engelmann's arrowhead	
		<i>Sagittaria latifolia</i> Willd.	broadleaf arrowhead	
		<i>Alisma subcordatum</i> Raf.	American water plantain	
	Anacardiaceae	<i>Rhus copallinum</i> L. **	winged sumac**	
		<i>Rhus glabra</i> L.**	smooth sumac**	
		<i>Toxicodendron vernix</i> (L.) Kuntze **	poison sumac**	
		<i>Rhus vernix</i>		
	Apiaceae	<i>Oxypolis rigidior</i> (L.) Raf.	stiff cowbane	
		<i>Oxypolis rigidior</i> var. <i>ambigua</i>		
	Apocynaceae	<i>Apocynum androsaemifolium</i> L.**	spreading dogbane**	
		<i>Apocynum cannabinum</i> L.	Indianhemp	
		<i>Apocynum</i> × <i>floribundum</i> Greene (pro sp.) [<i>androsaemifolium</i> × <i>cannabinum</i>] **	intermediate dogbane**	
	Aquifoliaceae	<i>Ilex glabra</i> (L.) Gray	inkberry	
		<i>Ilex laevigata</i> (Pursh) Gray	smooth winterberry	
		<i>Ilex opaca</i> Ait.	American holly	
		<i>Ilex verticillata</i> (L.) Gray	common winterberry	
Araceae	<i>Orontium aquaticum</i> L.	goldenclub		
	<i>Peltandra virginica</i> (L.) Schott	green arrow arum		
Asteraceae	<i>Anaphalis margaritacea</i> (L.) Benth.	Pearly-everlasting		
	<i>Antennaria neglecta</i> Greene var. <i>neodioica</i> (Greene) Cronq. **	Field pussytoes**		
	<i>Artemisia biennis</i> Willd. **	Biennial wormwood**		

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
		<i>Centaurea biebersteinii</i> DC. **	spotted knapweed**
		<i>Cirsium discolor</i> (Muhl. ex Willd.) Spreng.	field thistle
		<i>Cirsium vulgare</i> (Savi) Ten. **	bull thistle**
		<i>Conyza canadensis</i> (L.) Cronq.	horseweed
		<i>Eurybia compacta</i> Nesom	slender aster
		<i>Eurybia spectabilis</i> (Ait.) Nesom	western showy aster
		<i>Euthamia graminifolia</i> (L.) Nutt. **	flat-top goldentop**
		<i>Solidago graminifolia</i>	
		<i>Euthamia tenuifolia</i> (Pursh) Nutt.	slender goldentop
		<i>Solidago tenuifolia</i>	
		<i>Gamochaeta purpurea</i> (L.) Cabrera	spoonleaf purple everlasting
		<i>Gnaphalium purpurea</i>	
		<i>Gnaphalium uliginosum</i> L. **	marsh cudweed**
		<i>Hieracium gronovii</i> L.	queendevil
		<i>Hypochaeris radicata</i> L. **	Cat's-ear**
		<i>Ionactis linariifolius</i> (L.) Greene	flaxleaf whitetop aster
		<i>Aster linariifolius</i>	
		<i>Krigia virginica</i> (L.) Willd. **	Virginia dwarf dandelion**
		<i>Liatris pilosa</i> (Ait.) Willd. var. <i>pilosa</i>	shaggy blazing star
		<i>Lacinaria graminifolia</i>	
		<i>Oclemena nemoralis</i> (Ait.) Greene	bog aster
		<i>Aster nemoralis</i>	
		<i>Pseudognaphalium obtusifolium</i> (L.) Hilliard & Burt ssp. <i>obtusifolium</i>	rabbittobacco
		<i>Sericocarpus asteroides</i> (L.) B.S.P.	toothed whitetop aster
		<i>Aster asteroides</i>	
		<i>Solidago odora</i> Ait. var. <i>odora</i>	anisescented goldenrod
		<i>Solidago puberula</i> Nutt.	downy goldenrod
		<i>Solidago stricta</i> Ait.*	wand goldenrod*
		<i>Symphyotrichum dumosum</i> (L.) Nesom	rice button aster
		<i>Aster dumosus</i>	
		<i>Symphyotrichum novi-belgii</i> (L.) Nesom	New York aster
		<i>Aster novi-belgii</i>	
		<i>Taraxacum officinale</i> G.H. Weber ex Wiggers**	dandelion**
	Betulaceae	<i>Betula populifolia</i> Marsh.	gray birch

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
	Brassicaceae	<i>Lepidium campestre</i> (L.) Ait. f.**	Cow cress**
	Campanulaceae	<i>Lobelia canbyi</i> Gray *	Canby's lobelia*
		<i>Lobelia nuttallii</i> J.A. Schultes	Nuttall's lobelia
		<i>Triodanis perfoliata</i> (L.) Nieuwl.**	clasping Venus' looking-glass**
	Caprifoliaceae	<i>Viburnum nudum</i> L.	possumhaw
		<i>Viburnum nudum</i> L. var. <i>cassinoides</i> (L.) Torr. & Gray	withe-rod
		<i>Viburnum cassinoides</i>	
	Caryophyllaceae	<i>Minuartia caroliniana</i> (Walt.) Mattf.	pinebarren stitchwort
		<i>Stellaria media</i> (L.) Vill.**	common chickweed**
	Cistaceae	<i>Helianthemum canadense</i> (L.) Michx.	long-branch frostweed
		<i>Hudsonia ericoides</i> L.	pinebarren goldenheather
		<i>Hudsonia tomentosa</i> Nutt.	woolly beachheather
		<i>Lechea minor</i> L.	thymeleaf pinweed
		<i>Lechea racemulosa</i> Michx.	pinweed
		<i>Lechea tenuifolia</i> Michx.	narrowleaf pinweed
	Clethraceae	<i>Clethra alnifolia</i> L.	coastal sweetpepperbush
	Clusiaceae	<i>Hypericum canadense</i> L.	lesser Canadian St. Johnswort
		<i>Hypericum crux-andreae</i> (L.) Crantz	St. Peterswort
		<i>Hypericum stans</i>	
		<i>Hypericum densiflorum</i> Pursh	bushy St. Johnswort
		<i>Hypericum gentianoides</i> (L.) B.S.P.	orangegrass
		<i>Hypericum hypericoides</i> (L.) Crantz ssp. <i>multicaule</i> (Michx. ex Willd.) Robson	St. Andrew's cross
		<i>Hypericum stragulum</i>	
		<i>Triadenum virginicum</i> (L.) Raf.	Virginia marsh St. Johnswort
		<i>Hypericum virginicum</i>	
	Cuscutaceae	<i>Cuscuta compacta</i> Juss. ex Choisy	Compact dodder
		<i>Cuscuta gronovii</i> Willd. ex J.A. Schultes	scaldweed
	Cyperaceae	<i>Bulbostylis capillaris</i> (L.) Kunth ex C.B. Clarke**	densetuft hairsedge**
		<i>Carex atlantica</i> Bailey	prickly bog sedge
		<i>Carex barrattii</i> Schwein. & Torr. *	Barratt's sedge*
		<i>Carex collinsii</i> Nutt.	Collins' sedge
		<i>Carex exilis</i> Dewey	coastal sedge

Table E-2. Species List for WGR of Vascular Plants			
Phylum	Family	Scientific Name	Common Name
		<i>Carex livida</i> (Wahlenb.) Willd.	livid sedge
		<i>Carex pensylvanica</i> Lam.	Pennsylvania sedge
		<i>Carex striata</i> Michx.	Walter's sedge
		<i>Carex walteriana</i>	
		<i>Carex stricta</i> Lam.	Tussock sedge
		<i>Carex tonsa</i> (Fern.) Bickn.	shaved sedge
		<i>Cladium mariscoides</i> (Muhl.) Torr.	smooth sawgrass
		<i>Cyperus dentatus</i> Torr.	toothed flatsedge
		<i>Dulichium arundinaceum</i> (L.) Britt.	threeway sedge
		<i>Eleocharis acicularis</i> (L.) Roemer & J.A. Schultes	needle spikerush
		<i>Eleocharis microcarpa</i> Torr.	smallfruit spikerush
		<i>Eleocharis olivacea</i> Torr.	bright green spikerush
		<i>Eleocharis tuberculosa</i> (Michx.) Roemer & J.A. Schultes	cone-cup spikerush
		<i>Eriophorum virginicum</i> L.	tawny cottongrass
		<i>Rhynchospora alba</i> (L.) Vahl	white beaksedge
		<i>Rhynchospora capitellata</i> (Michx.) Vahl	brownish beaksedge
		<i>Rhynchospora cephalantha</i> Gray*	bunched beaksedge*
		<i>Rhynchospora fusca</i> (L.) Ait. f.	brown beaksedge
		<i>Rhynchospora gracilentata</i> Gray	slender beaksedge
		<i>Rhynchospora knieskernii</i> Carey*	Knieskern's beaksedge*
		<i>Rhynchospora pallida</i> M.A. Curtis*	pale beaksedge*
		<i>Rhynchospora torreyana</i> Gray	Torrey's beaksedge
		<i>Schoenoplectus subterminalis</i> (Torr.) Soják	swaying bulrush
		<i>Scirpus subterminalis</i>	
		<i>Scirpus cyperinus</i> (L.) Kunth	woolgrass
		<i>Scleria minor</i> W. Stone*	slender nutrush*
		<i>Scleria muehlenbergii</i> Steud.	Muehlenberg's nutrush
		<i>Scleria oligantha</i> Michx.	littlehead nutrush
		<i>Scleria pauciflora</i> Muhl. ex Willd.	fewflower nutrush
		<i>Scleria pauciflora</i> Muhl. ex Willd. var. <i>pauciflora</i> *	Papillose nut-rush*
		<i>Scleria reticularis</i> Michx.*	Reticulated Nut-rush*
		<i>Scleria triglomerata</i> Michx.	whip nutrush
	Diapensiaceae	<i>Pyxidantha barbulata</i> Michx.	flowering pixiemoss
	Droseraceae	<i>Drosera filiformis</i> Raf.	threadleaf sundew

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
		<i>Drosera intermedia</i> Hayne	spoonleaf sundew
		<i>Drosera rotundifolia</i> L.	roundleaf sundew
	Empetraceae	<i>Corema conradii</i> (Torr.) Torr. ex Loud.*	broom crowberry*
	Ericaceae	<i>Arctostaphylos uva-ursi</i> (L.) Spreng.	Bearberry
		<i>Chamaedaphne calyculata</i> (L.) Moench	leatherleaf
		<i>Epigaea repens</i> L.	trailing arbutus
		<i>Gaultheria procumbens</i> L.	eastern teaberry
		<i>Gaylussacia baccata</i> (Wangenh.) K. Koch	black huckleberry
		<i>Gaylussacia dumosa</i> (Andr.) Torr. & Gray	dwarf huckleberry
		<i>Gaylussacia frondosa</i> (L.) Torr. & Gray ex Torr.	blue huckleberry
		<i>Kalmia angustifolia</i> L.	sheep laurel
		<i>Kalmia latifolia</i> L.	mountain laurel
		<i>Leiophyllum buxifolium</i> (Berg.) Ell.	sandmyrtle
		<i>Leucothoe racemosa</i> (L.) Gray	Fetterbush
		<i>Lyonia ligustrina</i> (L.) DC.	maleberry
		<i>Lyonia mariana</i> (L.) D. Don	staggerbush
		<i>Rhododendron viscosum</i> (L.) Torr.	swamp azalea
		<i>Vaccinium angustifolium</i> Ait.	lowbush blueberry
		<i>Vaccinium caesariense</i> Mackenzie	New Jersey blueberry
		<i>Vaccinium corymbosum</i> L.	highbush blueberry
		<i>Vaccinium macrocarpon</i> Ait.	cranberry
		<i>Vaccinium pallidum</i> Ait.	low bush blueberry
		<i>Vaccinium vacillans</i>	
	Eriocaulaceae	<i>Eriocaulon aquaticum</i> (Hill) Druce	sevenangle pipewort
		<i>Eriocaulon septangulare</i>	
		<i>Eriocaulon compressum</i> Lam.	flattened pipewort
		<i>Eriocaulon decangulare</i> L.	tenangle pipewort
		<i>Eupatorium hyssopifolium</i> L.	hyssopleaf thoroughwort
	Euphorbiaceae	<i>Chamaesyce maculata</i> (L.) Small**	spotted sandmat**
		<i>Euphorbia maculata</i>	
		<i>Euphorbia ipecacuanhae</i> L.	ipecac spurge
	Fabaceae	<i>Baptisia tinctoria</i>	Horsefly weed
		<i>Coronilla varia</i> L. **	Crown vetch**
		<i>Kummerowia stipulacea</i> (Maxim.) Makino**	Korean clover**

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
		<i>Lespedeza hirta</i> (L.) Hornem.	hairy lespedeza
		<i>Lespedeza intermedia</i>	
		<i>Lespedeza virginica</i> (L.) Britt. **	slender lespedeza**
		<i>Medicago lupulina</i> L. **	black medic**
		<i>Melilotus officinalis</i> (L.) Lam. **	Yellow sweetclover**
		<i>Tephrosia virginiana</i> (L.) Pers.	Goats rue
		<i>Trifolium arvense</i> L. **	Rabbit-foot clover**
		<i>Trifolium repens</i> L. **	white clover**
	Fagaceae	<i>Quercus coccinea</i> Muenchh.	scarlet oak
		<i>Quercus ilicifolia</i> Wangenh.	bear oak
		<i>Quercus marilandica</i> Muenchh.	blackjack oak
		<i>Quercus stellata</i> Wangenh.	post oak
		<i>Quercus velutina</i> Lam.	black oak
	Gentianaceae	<i>Bartonia paniculata</i> (Michx.) Muhl.	twining screwstem
		<i>Bartonia virginica</i> (L.) B.S.P.	yellow screwstem
		<i>Gentiana autumnalis</i> L. *	pinebarren gentian*
		<i>Sabatia difformis</i> (L.) Druce	lanceleaf rose gentian
	Geraniaceae	<i>Erodium cicutarium</i> (L.) L'Hér. ex Ait. **	Redstem filaree**
	Haemodoraceae	<i>Lachnanthes caroliana</i> (Lam.) Dandy	Carolina redroot
		<i>Lachnanthes tinctoria</i>	
	Haloragaceae	<i>Proserpinaca palustris</i> L.	marsh mermaidweed
		<i>Proserpinaca pectinata</i> Lam.	combleaf mermaidweed
	Iridaceae	<i>Hypoxis hirsuta</i> (L.) Coville	common goldstar
		<i>Iris prismatica</i> Pursh ex Ker-Gawl.	slender blue iris
	Juncaceae	<i>Juncus biflorus</i> Ell.	bog rush
		<i>Juncus caesariensis</i> Coville*	New Jersey rush*
		<i>Juncus canadensis</i> J. Gay ex Laharpe	Canadian rush
		<i>Juncus debilis</i> Gray	weak rush
		<i>Juncus effusus</i> L.	common rush
		<i>Juncus militaris</i> Bigelow	bayonet rush
		<i>Juncus pelocarpus</i> E. Mey.	brownfruit rush
		<i>Juncus scirpoides</i> Lam.	needlepod rush
		<i>Juncus tenuis</i> Willd.	poverty rush
	Lamiaceae	<i>Trichostema dichotomum</i> L.	forked bluecurls
		<i>Monarda punctata</i> L.	spotted horsemint
	Lauraceae	<i>Sassafras albidum</i> (Nutt.) Nees	sassafras

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
	Lentibulariaceae	<i>Utricularia cornuta</i> Michx.	horned bladderwort
		<i>Utricularia geminiscapa</i> Benj.	hiddenfruit bladderwort
		<i>Utricularia juncea</i> Vahl	Southern bladderwort
		<i>Utricularia purpurea</i> Walt. *	eastern purple bladderwort*
		<i>Utricularia striata</i> Le Conte ex Torrey	Striped Bladderwort
		<i>Utricularia fibrosa</i>	
		<i>Utricularia subulata</i> L.	zigzag bladderwort
	Liliaceae	<i>Lilium superbum</i> L.	turk's-cap lily
		<i>Lophiola aurea</i> Ker-Gawl.	goldcrest
		<i>Lophiola americana</i>	
		<i>Narthecium americanum</i> Ker-Gawl. *	yellow asphodel*
		<i>Triantha racemosa</i> (Walt.) B.S.P. *	coastal false asphodel*
		<i>Tofieldia racemosa</i>	
		<i>Xerophyllum asphodeloides</i> (L.) Nutt.	eastern turkeybeard
	Lythraceae	<i>Decodon verticillatus</i> (L.) Ell.	swamp loosestrife
	Magnoliaceae	<i>Magnolia virginiana</i> L.	sweetbay
	Melastomataceae	<i>Rhexia mariana</i> L.	Maryland meadowbeauty
		<i>Rhexia virginica</i> L.	handsome Harry
	Monotropaceae	<i>Monotropa uniflora</i> L.	Indianpipe
	Myricaceae	<i>Comptonia peregrina</i> (L.) Coult.	sweet fern
		<i>Morella pensylvanica</i> (Mirbel) Kartesz, comb. nov. ined.	northern bayberry
	Nymphaeaceae	<i>Nymphaea odorata</i> Ait.	American white waterlily
	Nyssaceae	<i>Nyssa sylvatica</i> Marsh.	blackgum
	Orchidaceae	<i>Arethusa bulbosa</i> L. *	dragon's mouth*
		<i>Calopogon tuberosus</i> (L.) B.S.P.	tuberous grasspink
		<i>Calopogon tuberosus</i> (L.) B.S.P. var. <i>tuberosus</i>	tuberous grasspink
		<i>Calopogon pulchellus</i>	
		<i>Cypripedium acaule</i> Ait.	moccasin flower
		<i>Platanthera blephariglottis</i> (Willd.) Lindl.	white fringed orchid
		<i>Habenaria blephariglottis</i>	
		<i>Platanthera cristata</i> (Michx.) Lindl. *	crested yellow orchid*
		<i>Habenaria cristata</i>	
		<i>Pogonia ophioglossoides</i> (L.) Ker-Gawl.	snakemouth orchid

Table E-2. Species List for WGR of Vascular Plants

Phylum	Family	Scientific Name	Common Name
		<i>Spiranthes lacera</i> (Raf.) Raf. var. <i>gracilis</i> (Bigelow) Luer	northern slender ladies'-tresses
		<i>Spiranthes beckii</i>	
		<i>Spiranthes tuberosa</i> Raf.*	little ladies'-tresses*
	Oxalidaceae	<i>Oxalis stricta</i> L.**	Southern yellow wood sorrel**
	Phytolaccaceae	<i>Phytolacca americana</i> L.**	Poke weed**
	Plantaginaceae	<i>Plantago aristata</i> Michx.**	bracted plantain**
		<i>Plantago lanceolata</i> L.**	English plantain**
		<i>Plantago major</i> L.**	Broadleaf plantain**
	Poaceae	<i>Agrostis hyemalis</i> (Walt.) B.S.P.	ticklegrass
		<i>Agrostis perennans</i> (Walt.) Tuckerman	upland bentgrass
		<i>Amphicarpum purshii</i> Kunth	Pursh's millet-grass
		<i>Andropogon gerardii</i> Vitman	big bluestem
		<i>Andropogon glomeratus</i> (Walt.) B.S.P.	bushy bluestem
		<i>Andropogon virginicus</i> L.	broomsedge bluestem
		<i>Aristida dichotoma</i> Michx.	churchmouse threeawn
		<i>Aristida longispica</i> Poir.	three-awn grass
		<i>Aristida gracilis</i>	
		<i>Aristida purpurascens</i> Poir. var. <i>virgata</i> (Trin.) Allred*	arrowfeather threeawn*
		<i>Aristida virgata</i>	
		<i>Bromus japonicus</i> Thunb. ex Murr.**	Japanese Chess**
		<i>Bromus tectorum</i> L.**	cheatgrass**
		<i>Calamagrostis coarctata</i> (Torr.) Eat.	arctic reedgrass
		<i>Calamagrostis cinnoides</i>	
		<i>Calamagrostis pickeringii</i> Gray*	Pickering's Reedgrass*
		<i>Calamovilfa brevipilis</i> (Torr.) Scribn.*	pine barren reedgrass*
		<i>Danthonia epilis</i> Scribn.	Carolina oatgrass
		<i>Danthonia sericea</i> Nutt.	downy danthonia
		<i>Danthonia spicata</i> (L.) Beauv. ex Roemer & J.A. Schultes	poverty oatgrass
		<i>Dichantherium aciculare</i> (Desv. ex Poir.) Gould & C.A. Clark	needleleaf rosette grass
		<i>Panicum angustifolium</i>	
		<i>Dichantherium dichotomum</i> (L.) Gould	cypress panicgrass
		<i>Dichantherium sabulorum</i> (Lam.) Gould & C.A. Clark var. <i>thinium</i> (A.S. Hitchc. & Chase) Gould & C.A. Clark	hemlock rosette grass

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Phylum	Family	Scientific Name	Common Name
		<i>Panicum columbianum</i>	
		<i>Dichanthelium scabriusculum</i> (Ell.) Gould & C.A. Clark	woolly rosette grass
		<i>Panicum lanuginosum</i>	
		<i>Dichanthelium spretum</i> (J.A. Schultes) Freckmann	Eaton's rosette grass
		<i>Digitaria ischaemum</i> (Schreb.) Schreb. ex Muhl.	smooth crabgrass
		<i>Digitaria sanguinalis</i> (L.) Scop.	hairy crabgrass
		<i>Elymus repens</i> (L.) Gould**	quackgrass**
		<i>Eragrostis pectinacea</i> (Michx.) Nees ex. Steud var. <i>pectinacea</i>	tufted lovegrass
		<i>Eragrostis spectabularis</i> **	Petty coat climber*
		<i>Glyceria obtusa</i> (Muhl.) Trin.	Atlantic mannagrass
		<i>Microstegium vimineum</i> (Trin.) A. Camus	Nepalese browntop
		<i>Muhlenbergia torreyana</i> (J.A. Schultes) A.S. Hitchc.*	New Jersey muhly*
		<i>Muhlenbergia uniflora</i> (Muhl.) Fern.	bog muhly
		<i>Panicum dichotomiflorum</i> Michx.	fall panicgrass
		<i>Panicum rigidulum</i> Bosc ex Nees var. <i>pubescens</i> (Vasey) Lelong	redtop panicgrass
		<i>Panicum verrucosum</i> Muhl.	warty panicgrass
		<i>Panicum virgatum</i> L.	switchgrass
		<i>Phragmites australis</i> (Cav.) Trin. ex Steud.**	Common reed**
		<i>Saccharum giganteum</i> (Walt.) Pers.	sugarcane plume grass
		<i>Schizachyrium scoparium</i> (Michx.) Nash	little bluestem
		<i>Setaria viridis</i> (L.) Beauv. var. <i>viridis</i> **	green bristlegrass**
		<i>Sorghastrum nutans</i> (L.) Nash	Indiangrass
		<i>Tridens flavus</i> (L.) A.S. Hitchc. var. <i>flavus</i>	purpletop tridens
	Polygalaceae	<i>Polygala brevifolia</i> Nutt.	littleleaf milkwort
		<i>Polygala cruciata</i> L.	drumheads
		<i>Polygala lutea</i> L.	orange milkwort
		<i>Polygala nuttallii</i> Torr. & Gray	Nuttall's milkwort
	Polygonaceae	<i>Polygonella articulata</i> (L.) Meisn.	coastal jointweed
		<i>Rumex acetosella</i> L.**	Sheep sorrel**
	Primulaceae	<i>Trientalis borealis</i> Raf.	starflower
	Pyrolaceae	<i>Chimaphila maculata</i> (L.) Pursh	striped prince's pine
	Rosaceae	<i>Amelanchier canadensis</i> (L.) Medik.	Canadian serviceberry

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Phylum	Family	Scientific Name	Common Name
		<i>Photinia pyrifolia</i> (Lam.) Robertson & Phipps	red chokeberry
		<i>Pyrus arbutifolia</i>	
		<i>Prunus serotina</i> Ehrh.	black cherry
		<i>Rubus cuneifolius</i> Pursh	sand blackberry
		<i>Rubus hispidus</i> L.	bristly dewberry
		<i>Rubus occidentalis</i> L.**	Black raspberry**
	Rubiaceae	<i>Diodia teres</i> Walt.	poorjoe
		<i>Mitchella repens</i> L.	partridgeberry
	Salicaceae	<i>Populus grandidentata</i> Michx.	bigtooth aspen
	Santalaceae	<i>Comandra umbellata</i> (L.) Nutt.	bastard toadflax
	Sarraceniaceae	<i>Sarracenia purpurea</i> L.	purple pitcherplant
	Scrophulariaceae	<i>Agalinis fasciculata</i> (Ell.) Raf.*	beach false foxglove*
		<i>Agalinis virgata</i>	
		<i>Aureolaria pedicularia</i> (L.) Raf.	fernleaf yellow false foxglove
		<i>Linaria vulgaris</i> P. Mill.**	butter and eggs**
		<i>Melampyrum lineare</i> Desr.	narrowleaf cowwheat
		<i>Nuttallanthus canadensis</i> (L.) D.A. Sutton	Canada toadflax
		<i>Linaria canadensis</i>	
		<i>Verbascum blattaria</i> L.**	moth mullein**
		<i>Verbascum thapsus</i> L.**	common mullein**
		<i>Agalinis setacea</i> (J.F. Gmel.) Raf.	threadleaf false foxglove
	Smilacaceae	<i>Smilax glauca</i> Walt.	cat greenbrier
		<i>Smilax pseudochina</i> L.	bamboo vine
		<i>Smilax rotundifolia</i> L.	roundleaf greenbrier
	Solanaceae	<i>Solanum ptychanthum</i> Dunal**	eastern black nightshade**
	Violaceae	<i>Viola lanceolata</i> L.	bog white violet
		<i>Viola pedata</i> L.	birdfoot violet
		<i>Viola ×primulifolia</i> L.	Primrose Leaf Violet
	Vitaceae	<i>Parthenocissus quinquefolia</i> (L.) Planch.	Virginia creeper
	Xyridaceae	<i>Xyris difformis</i> Chapman	bog yelloweyed grass
		<i>Xyris smalliana</i> Nash	Small's yelloweyed grass
		<i>Xyris congdonii</i>	
		<i>Xyris torta</i> Sm.	slender yelloweyed grass

Table E-3. Species List for WGR of Butterflies & Moths

<i>Scientific Name</i>	Common Name
<i>Achyra rantalis</i>	Garden Webworm Moth
<i>Acronicta obliquata</i>	Smear-dagger Moth
<i>Anatrytone logan</i>	Delaware Skipper
<i>Atalopedes campestris</i>	Sachem
<i>Caenurgina erechthea</i>	Forage Looper Moth
<i>Callophrys augustinus</i>	Brown Elfin
<i>Callophrys hesseli</i>	Hessel's Hairstreak
<i>Callophrys niphon</i>	Eastern Pine Elfin
<i>Callophrys polios</i>	Hoary Elfin
<i>Calycopis cecrops</i>	Red-banded Hairstreak
<i>Catocala epione</i>	Epione Underwing
<i>Celastrina ladon (argiolus)</i>	Spring Azure
<i>Celastrina spp.</i>	<i>Celastrina spp.</i>
<i>Cercyonis pegala</i>	Common Wood Nymph
<i>Colias eurytheme</i>	Orange Sulphur
<i>Colias philodice</i>	Clouded Sulphur
<i>Crambus spp.</i>	<i>Crambus spp.</i>
<i>Crocidophora tuberculalis</i>	Pale-winged Crocidophora Moth
<i>Cupido (Everes) comyntas</i>	Eastern Tailed-blue
<i>Cynia inopinatus</i>	Unexpected Cynia
<i>Danaus plexippus</i>	Monarch
<i>Epiblema otiosana</i>	Biden's borer moth
<i>Erastria coloraria</i>	Broad-lined Erastria
<i>Erynnis horatius</i>	Horace's Duskywing
<i>Erynnis juvenalis</i>	Juvenal's Duskywing
<i>Euphyes dion</i>	Dion Skipper
<i>Eupithecia miserulata</i>	Common Eupithecia
<i>Euptoieta claudia</i>	Variiegated Fritillary
<i>Eurema lisa</i>	Little Yellow
<i>Galgula partita</i>	The Wedgling
<i>Heliocheilus turbata</i>	Spotted Straw
<i>Hemileuca maia</i>	Buck Moth
<i>Holomelina aurantiaca</i>	Orange Holomelina

Table E-3. Species List for WGR of Butterflies & Moths

<i>Scientific Name</i>	<i>Common Name</i>
<i>Hypagyrtis piniata</i>	Pine Measuringworm Moth
<i>Junonia coenia</i>	Common Buckeye
<i>Limentis arthemis astyanax</i>	Red Spotted Purple
<i>Lithacodia bellicula</i>	Bog Lithacodia
<i>Lymantria dispar</i>	Gypsy Moth
<i>Neonympha areolata septentrionalis</i>	Georgia Satyr
<i>Neonympha helicta</i>	Helicta Satyr
<i>Pangrapta decoralis</i>	Decorated Owlet
<i>Papilio glaucus</i>	Tiger Swallowtail
<i>Papilio troilus</i>	Spicebush Swallowtail
<i>Parallelia bistriaris</i>	Maple Looper Moth
<i>Pediasia trisecta</i>	Sod Webworm Moth
<i>Petrophila bifascialis</i>	<i>Petrophila bifascialis</i>
<i>Phigalia strigataria</i>	Small Phigalia
<i>Pholisora catullus</i>	Common Sootywing
<i>Phyciodes cocyta</i>	Northern Crescent
<i>Phyciodes tharos</i>	Pearl Crescent
<i>Phytometra rhodarialis</i>	Pink-bordered Yellow
<i>Pieris rapae</i>	Cabbage White
<i>Polygonia spp.</i>	<i>Polygonia spp.</i>
<i>Renia discoloralis</i>	Discolored Renia
<i>Rivula propinqualis</i>	Spotted Grass Moth
<i>Scopula purata</i>	Chalky Wave
<i>Sparganothis reticulatana</i>	Reticulated Sparganothis
<i>Sparganothis sulphureana</i>	Sparganothis Fruitworm Moth
<i>Strymon melinus</i>	Grey Hairstreak
<i>Thioptera nigrofimbria</i>	Black-bordered Lemon Moth
<i>Tortricidia flexuosa</i>	<i>Tortricidia flexuosa</i>
<i>Urola nivalis</i>	Snowy Urola Moth
<i>Vanessa atalanta</i>	Red admiral
<i>Vanessa virginiensis</i>	American Lady
<i>Zanclognatha pedipilalis</i>	Grayish Zanclognatha

Table E-4. Species List for WGR of Fish*

<i>Scientific Name</i>	Common Name
<i>Acantharchus pomotis</i>	mud sunfish
<i>Ameiurus natalis</i>	yellow bullhead
<i>Anguilla rostrata</i>	american eel
<i>Aphredoderus sayanus</i>	pirate perch
<i>Enneacanthus chaetodon</i>	blackbanded sunfish
<i>Enneacanthus gloriosus</i>	bluespotted sunfish
<i>Enneacanthus obesus</i>	banded sunfish
<i>Erimyzon oblongus</i>	creek chubsucker
<i>Esox americanus</i>	redfin pickerel
<i>Esox niger</i>	chain pickerel
<i>Etheostoma fusiforme</i>	swamp darter
<i>Noturus gyrinus</i>	tadpole madtom
<i>Umbra pygmaea</i>	eastern mudminnow

*Bien (2004) reports that list is incomplete due to low water conditions during sampling.

Table E-5. Species List for WGR of Amphibians & Reptiles

Class	<i>Scientific Name</i>	Common Name
Anura	<i>Desmognathus fuscus fuscus</i>	Northern Dusky Salamander
	<i>Pseudotriton ruber ruber</i>	Northern Red Salamander
	<i>Bufo woodhousii fowleri</i>	Fowlers Toad
	<i>Hyla andersonii</i>	Pine Barrens Treefrog
	<i>Pseudacris crucifer</i>	Northern Spring Peeper
	<i>Rana clamitans</i>	Green Frog
	<i>Rana utricularia</i>	Southern Leopard Frog
	<i>Rana virgatipes</i>	Carpenter Frog
Testudines	<i>Chrysemys picta picta</i>	Eastern Painted Turtle
	<i>Clemmys guttata</i>	Spotted Turtle
	<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle
	<i>Terrapene carolina carolina</i>	Eastern Box Turtle
Squamata	<i>Carphophis amoenus amoenus</i>	Eastern Worm Snake
	<i>Coluber constrictor constrictor</i>	Northern Black Racer
	<i>Croatalus horridus</i>	Timber Rattlesnake
	<i>Heterodon platyrhinus</i>	Eastern Hognose Snake
	<i>L.t. triangulum X L. t. elapsoides</i>	Coastal Plain Milk Snake
	<i>Lampropeltis getula getula</i>	Eastern Kingsnake
	<i>Nerodia sipedon sipedon</i>	Northern Water Snake

Table E-5. Species List for WGR of Amphibians & Reptiles

Class	<i>Scientific Name</i>	Common Name
	<i>Opheodrys aestivus</i>	Rough Green Snake
	<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake
	<i>Storeria occipitomaculata occipitomaculata</i>	Northern Redbelly Snake
	<i>Thamnophis sauritus sauritus</i>	Eastern Ribbon Snake
	<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake
	<i>Sceloporus undulatus hyacinthinus</i>	Northern Fence Lizard

Table E-6. Species List for WGR of Birds

Scientific Name	Common Name
<i>Accipiter cooperii</i>	coopers hawk
<i>Accipiter striatus</i>	sharp shinned hawk
<i>Agelaius phoeniceus</i>	red winged blackbird
<i>Archilochus colubris</i>	ruby throated hummingbird
<i>Ardea occidentalis</i>	great blue heron
<i>Baeolophus bicolor</i>	tufted titmouse
<i>Bombycilla cedrorum</i>	cedar waxwing
<i>Branta canadensis</i>	canada goose
<i>Bubo virginianus</i>	great horned owl
<i>Buteo jamaicensis</i>	red tail hawk
<i>Buteo lineatus</i>	red shouldered hawk
<i>Caprimulgus vociferus</i>	whip-poor-will
<i>Cardinalis cardinalis</i>	northern cardinal
<i>Carduelis tristis</i>	american goldfinch
<i>Carpodacus purpureus</i>	purple finch
<i>Cathartes aura</i>	turkey vulture
<i>Catharus fuscescens</i>	veery
<i>Catharus guttatus</i>	hermit thrush
<i>Certhia americana</i>	brown creeper
<i>Ceryle alcyon</i>	belted kingfisher
<i>Chaetura pelagica</i>	chimney swift
<i>Charadrius vociferus</i>	killdeer
<i>Chordeiles minor</i>	common night hawk
<i>Circus cyaneus</i>	northern harrier
<i>Coccyzus erythrophthalmus</i>	black billed cuckoo
<i>Colaptes auratus</i>	northern flicker
<i>Contopus virens</i>	eastern wood pewee
<i>Corvus brachyrhynchos</i>	american crow
<i>Cyanocitta cristata</i>	blue jay
<i>Dendroica coronata</i>	yellow rumped warbler
<i>Dendroica discolor</i>	prairie warbler
<i>Dendroica fusca</i>	blackburnian warbler
<i>Dendroica petechia</i>	yellow warbler
<i>Dendroica pinus</i>	pine warbler
<i>Dumetella carolinensis</i>	gray catbird

Table E-6. Species List for WGR of Birds

Scientific Name	Common Name
<i>Eremophila alpestris</i>	horned lark
<i>Falco columbarius</i>	common merlin
<i>Falco sparverius</i>	american kestrel
<i>Geothlypis trichas</i>	common yellowthroat
<i>Icterus galbula</i>	northern oriole
<i>Larus argentatus</i>	herring gull
<i>Larus atricilla</i>	laughing gull
<i>Meleagris gallopavo</i>	wild turkey
<i>Melospiza melodia</i>	song sparrow
<i>Mimus polyglottos</i>	northern mockingbird
<i>Mniotilta varia</i>	black and white warbler
<i>Molothrus ater</i>	brown headed cowbird
<i>Myiarchus crinitus</i>	great crested flycatcher
<i>Oporornis formosus</i>	kentucky warbler
<i>Passerella iliaca</i>	fox sparrow
<i>Phasianus colchicus</i>	ring-necked pheasant
<i>Pheucticus ludovicianus</i>	rose breasted grosbeak
<i>Picoides pubescens</i>	downy woodpecker
<i>Picoides villosus</i>	hairy woodpecker
<i>Pipilo erythrophthalmus</i>	eastern towhee
<i>Piranga olivacea</i>	scarlet tanager
<i>Piranga rubra</i>	northern parula
<i>Piranga rubra</i>	summer tanager
<i>Poecile carolinensis</i>	black-capped chickadee
<i>Quiscalus quiscula</i>	common grackle
<i>Sayornis phoebe</i>	eastern phoebe
<i>Scolopax minor</i>	american woodcock
<i>Seiurus aurocapillus</i>	ovenbird
<i>Setophaga ruticilla</i>	american redstart
<i>Sialia sialis</i>	eastern bluebird
<i>Sitta canadensis</i>	white breasted nuthatch
<i>Spizella arborea</i>	tree sparrow
<i>Spizella passerina</i>	chipping sparrow
<i>Spizella pusilla</i>	field sparrow
<i>Strix varia</i>	barred owl
<i>Tachycineta bicolor</i>	tree swallow

Table E-6. Species List for WGR of Birds

Scientific Name	Common Name
<i>Thryothorus ludovicianus</i>	carolina wren
<i>Toxostoma rufum</i>	brown thrasher
<i>Turdus migratorius</i>	american robin
<i>Tyrannus tyrannus</i>	eastern kingbird
<i>Vireo griseus</i>	white eyed vireo
<i>Vireo olivaceus</i>	red eyed vireo
<i>Wilsonia citrina</i>	hooded warbler
<i>Zenaida macroura</i>	mourning dove

Table E-7. Species List for WGR of Mammals**

Scientific Name	Common Name
<i>Blarina brevicauda</i>	Short-tail shrew
<i>Canis latrans</i> , var.	Eastern coyote
<i>Clethrionomys gapperi</i>	Red-back vole
<i>Microtus pennsylvanicus</i>	Meadow vole
<i>Microtus pinetorum</i>	Pine vole
<i>Odocoileus virginianus</i>	White-tailed deer
<i>Peromyscus leucopus</i>	White-footed mouse
<i>Sorex cinereus</i>	Masked shrew
<i>Synaptomys cooperi</i>	Southern bog lemming
<i>Tamias striatus</i>	Eastern chipmunk
<i>Zapus hudsonius</i>	Meadow jumping mouse
**Bien (pers. comm.) indicates this list is incomplete as comprehensive mammal surveys have not been completed.	

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Appendix G

Trespass Permit Program

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Services

TRESPASS PERMIT PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

OPR: 177 FW/DET 1
(MSgt Michael Mimler)

Certified by: 177 OG/ CC (Col DiDonna)
Pages: 16

ACCESSIBILITY: This publication is available digitally on the 177 FW Local Area Network:
K: /PUBS/FW

RELEASIBILITY: There are no releasibility restrictions on this publication.

This instruction establishes procedures for recreational hunting activities at Warren Grove Range, New Jersey, 177th FW/Det 1. It complements the Warren Grove Range Integrated Natural Resources Management Program (INRMP). This instruction is applicable to all personnel on the range for the purpose of recreational hunting.

1. GENERAL CONCEPTS AND RESPONSIBILITIES

1.1. Background. Warren Grove Range (WGR / the range) consists of 9416 acres of Pine Barrens within the New Jersey Pinelands. Approximately 1,000 acres of the range is utilized for weapons impact and range operations. The remaining land is utilized as buffer lands for weapons footprint containment and presents ample opportunity for recreational activities when not in conflict with range activities or the military mission. In compliance with AFI 32-7064, *Integrated Natural Resources Management*, the federal land of WGR will be available to select participants for recreational trespass and hunting purposes.

1.1.1. AFI 32-7064, *Integrated Natural Resources Management*, establishes the need for hunting program management within the Integrated Natural Resources Management Plan (INRMP). WGR's current INRMP does not address the requirements of nor prescribe a hunting program for WGR lands. This instruction will be used to address these identified shortfalls until inclusion in the INRMP.

1.2. Objectives. The objectives of this instruction are:

1.2.1. To establish criteria for participants to utilize WGR for recreational trespass and hunting purposes.

1.2.2. To define procedures for recreational trespass and hunting on the range.

1.2.3. To manage wildlife populations in compliance with the WGR INRMP through execution of a recreational hunting program.

1.3. Responsibilities. Range Operating Agency will:

1.3.1. Provide resources necessary to execute provisions of the recreational trespass and hunting program.

1.3.2. Review this instruction annually.

1.4. The Range Commander will:

1.4.1. Ensure safe conduct of this program through the Range Safety Officer.

1.4.2. Ensure compliance of this instruction by participating members.

1.4.3. Ensure access to WGR land for recreational trespass and hunting activities when not in conflict with range operations or the military mission.

1.4.4. Ensure trespass members are not within weapons impact or footprint areas prior to permitting weapons release on the range.

1.5. 177FW/Det 1 Land Manger will:

1.5.1. Ensure integration of this program into the WGR INRMP at the next revision.

1.5.2. Review this instruction for compliance with AF, DOD, and state and federal governing directives.

1.6. Range Operations Officer will be responsible for daily execution of the trespass and hunting permit program.

1.7. Military Personnel Assigned/Attached to 177FW/Det 1 has the authority to act in the range commander's behalf concerning program activity conducted on Warren Grove Range. They may check trespass permits, hunting licenses and season permits and ask anyone abusing this instruction to leave the installation.

1.8. Trespass permit holders will:

1.8.1. Comply with applicable NJ State and US Federal laws governing firearms possession, transportation, and use.

1.8.2. Comply with all NJ State and Federal laws while on Warren Grove Range including but not limited to the following topic areas: possession or use of alcohol, illegal drugs or other controlled substances, motor vehicle operations, and firearm possession and/or use.

1.8.3. Comply with the provisions of this instruction and New Jersey Department of Environmental Protection (NJDEP) and New Jersey Division of Fish and Game (NJDFG) regulations.

1.9. Eligibility Criteria. Due to potential weapons hazards, environmental concerns, fire danger risk, unique habitat, and multiple federal and NJ state threatened and endangered species found on Warren Grove Range, program eligibility is limited to the following categories:

1.9.1. Active duty, guard, reserve, and retired military, and may escort, their immediate family or extended family IAW Paragraph 1.9.2. Immediate family members include children, parents, siblings, legal dependents, spouses, and the spouses of those immediate family members above. Minor dependents are the responsibility of their parent/guardian while on the range IAW paragraphs 2.2 and 10 below.

1.9.2. Extended family members may be granted eligibility for this program at the discretion of the Range Commander on a case by case basis.

1.9.3. Limited eligibility may be extended to other participants not listed above at the discretion of the Range Commander on a case by case basis. Limited eligibility members will be granted access to the range under the provisions of this program if they are escorted by a Warren Grove Range crewmember or designated representative. Escorted members must remain within the vicinity of their escort for the duration of their stay on the range under the provisions of this program.

2. PROCEDURES

2.1. Requirements for Participation. All participants of this program must have a valid Warren Grove Range trespass permit, attend program training brief as outlined in this instruction and have a valid New Jersey state hunting license (including all bag tickets, season permits, as required by the state of New Jersey for the species being hunted). Participants of this program who are not actively hunting game or otherwise require a hunting license by the state of New Jersey do not require a hunting license.

2.2. Trespass Permits:

2.2.1. Program Training. WGR trespass permits will be issued by range personnel during the WGR trespass training sessions. The dates for these sessions will be posted by August each year. Session dates will be posted on WGR inter and intra-net sites and may alternately be obtained from 177th FW/Det 1 (609-761-6700). Alternate training sessions may be offered upon request with proper coordination, workload and personnel permitting.

2.2.2. Proper identification must be presented to obtain a trespass permit. Active duty, guard, reserve, retired military and dependents must show a DOD CAC or DOD Uniformed Services Identification and Privileges Card. Extended family and limited eligibility participants must show valid driver's license or other federal or state issued photo identification.

2.2.3. Liability Release. Each trespass permit applicant is required to complete a liability release form. A legal parent or guardian must complete a minor applicant's release form.

2.2.4. Permit Application. Applicants must complete applications in full. All requested information must be included on the application. Failure to complete the permit application and liability release form will result in denial of the application.

2.2.5. All personnel entering the range under the provisions of this program must have a valid WGR trespass permit in their possession. This permit is a waiver of liability and documents the individual has received a briefing on dangers associated with presence and trespass activities on Warren Grove Range.

2.2.6. Immediate family members must have a valid WGR trespass permit in their possession and must be accompanied by their sponsor.

2.2.7. Minor dependents (under the age of 18) must have a valid WGR trespass permit in their possession. Minor dependents are the responsibility of the legal parent or guardian who completed the minor applicant's release form. WGR trespass permit holders are allowed to bring up to two (2) minor dependents on range at one time.

3. SAFETY

3.1. Safety is of prime importance during all activities while on range. Attendance at the annual Warren Grove Range trespass permit training brief and down range safety/EOD Unexploded Ordnance (UXO) safety brief is mandatory. There are no exceptions and no waiver authority to this criterion.

3.2. "In the vicinity": Limited eligibility participants are required to remain in the vicinity of an escort while within WGR lands. "In the vicinity" is defined as remaining within eyesight of respective participants. Short duration periods (less than one minute) with no visual contact may occur due to dense vegetation and are permitted during transit to / from areas. During these no-sight times, participants must remain within ear-shot of one another and no weapons will be expended until regaining sight of each other.

3.3. Except for 177FW/Det 1 assigned or attached personnel (range crewmember), WGR trespass permit holders are restricted from entering the WGR impact area as defined in Attachment 1. Other areas that are off limits to trespass permit holders will be briefed to permit holders and include, but are not limited to: the range compound area, flank tower, old flank tower and location, Central Park area, weapons burial sites, the cabin and military

containers off of Calico Road. These areas are well marked and identified in the trespass training program.

3.4. If a wounded animal enters the impact area or other off limit area, participants are required to mark the spot the animal entered the area and contact a range crew member or representative for permission or escort into the impact area.

3.5. Trespass permit holders may not touch or otherwise disturb any target or target material. Range targets may contain unexploded weapons, broken glass, wasp and bee nests, snakes, rats and many other of a number of hazards. Participants are not permitted to go inside targets. Climbing, sitting, standing, or shooting on or from targets is strictly prohibited. Shooting of targets is prohibited, is considered vandalism of government property, and may be prosecuted to the full extent of the law.

3.6. Program participants may encounter potentially dangerous items while on range. Participants should report suspect materials found outside impact area boundaries to Warren Grove Range personnel at 609-761-6700 (during normal business hours) or leave a message after hours. Report should include location and description of item.

3.7. For program participant safety, overnight trespass is not authorized. Camping or otherwise staying on range land overnight is prohibited.

4. ENVIRONMENTAL

4.1. Warren Grove Range is located within the National Pineland Reserve and is home to many state and federally listed endangered and threatened species, to include; Knieskern beaked rush, Broom Crowberry and Timber Rattlesnake.

4.2. WGR trespass permit holders will make every effort keep the habitats of all endangered and threatened species intact in accordance with the Integrated Natural Resources Management Plan (INRMP), NJDEP, DFW and Endangered Species Act (ESA).

4.3. Other than animals harvested IAW this instruction, the removal and/or importing of any living plant or wildlife is prohibited.

5. RANGE ACCESS

5.1. WGR trespass permit holders are responsible for ensuring that they are familiar with range access procedures. Failure to comply with access procedures will result in loss of trespass privilege and may result in lawful prosecution.

5.2. Access to WGR lands for trespass permit holders is limited to the main gate at the Warren Grove Range Building 1 entrance. Accessing WGR lands through any other route is not permitted, will be considered in violation of this program, may be considered illegal trespassing, and will be prosecuted to the full extent of the law.

5.3. Range entry for recreational trespass and hunting is restricted to periods where no range operations are scheduled. This normally includes all day on Mondays, Sundays, and some Saturdays. During days when range operations are scheduled, program participants must be off of the range by 0700 and remain off until the end of daily operations (typically 1630).

5.4. During high frequented hunting periods (ex: deer 6-day firearm season), the main road gate and side down-range gate (see Attachment 4) will be locked with a combination padlock to provide access to program participants. During other periods, combination locks will be removed and access is limited to range crewmembers and designated personnel. If recreational trespass or hunting access is desired during times other than high frequented hunting periods, combination locks will be installed upon request for individual access for the duration of the trespass permit.

5.5. For range security, combinations for locks will be periodically changed. It is the responsibility of trespass permit holders to validate current lock combination prior to attempting range access.

5.6. Lock combinations will only be issued to DoD credentialed personal. Lock combinations will only valid for the duration of their trespass permit. Combinations may be obtained in person at Warren Grove Range during normal business hours (Tue – Fri). Participants must provide their trespass permit number which will be checked for validity and entered into the range database prior to the combination being issued. This allows the installation to track usage and to know who had access to Warren Grove Range during any given period.

5.7. To ensure continued success of the military mission at Warren Grove Range, range personnel have right to restrict access at any time. Restrictions on access may be necessary for the military mission, safety, and proper stewardship of the natural resources.

6. RANGE ENTRY

6.1. Entry to WGR lands will be via Bombing Range Road, at mile marker 7.5, Ocean County Route 539. Participants are required to close and lock all gates behind them upon entry and exit. Participants will report any open or unlocked gate immediately to Range Operations at 609-761-6700 during normal duty hours or notify the Command Post at (609) 761-6001 after duty hours.

6.2. Participants will sign in at the range trespass sign-in station with grid destination or section number prior to proceeding onto range lands. This allows other participants and range personnel to know where WGR trespass permit holders are and will aid in locating someone in case of an emergency or other need to contact the individual. It is the responsibility of WGR trespass permit holders to know where the next closest hunter is when on range land and must maintain a minimum distance of 250 feet between one another.

6.3. Participants will check for any new information regarding hunting activities, special operations, posted at sign-in/out location prior to proceeding onto range lands.

7. RANGE OPERATIONS

7.1. WGR normal hours of operation are Tuesday through Friday and two scheduled Saturdays and a Sunday from 0730 to 1630. During the night flying season, operating hours are normally 1200 to 2300 Tuesday, Wednesday, and Thursday and 0730 to 1630 Friday. The range is occasionally active at other times, as mission requires. Program participants may call Warren Grove Range Operations during normal duty hours to confirm that no operations are scheduled prior to arriving at WGR.

7.2. All permit holders must make every effort to ensure that no activities are scheduled prior to entering the restricted access area. During days when range operations are scheduled, program participants must be off of the range by 0700 and remain off until the end of daily operations (typically 1630).

7.3. During the six day firearm deer season, special precautions will be made to allow access to WGR trespass permit holders during daylight hours (i.e.: no daylight range operations will be scheduled). On days when night flying is scheduled at the range, permit holders must be clear of range land by 1800 hours.

8. VEHICLE OPERATIONS

8.1. Only personnel approved by the Range Commander, or his representative through the WGR trespass permit program, may drive personally owned vehicles on Warren Grove Range.

8.2. Program participants must register the make, model, year, color, and tag number of the vehicle(s) they will use on Warren Grove Range. Only properly licensed individuals may operate a vehicle on the range.

8.3. Dirt bikes are prohibited on Warren Grove Range.

8.4. Government owned vehicles will not be used for recreational trespass or hunting activities. Government owned vehicles will not be used to assist privately owned vehicles that become stuck or broken down except when the stuck vehicle affects the mission and then only by the direction of the Range Commander.

8.5. Vehicles will be kept on roads designated for vehicle traffic (Attachment 1). Participants must be extremely careful with hot vehicle parts and any other fire ignition sources to avoid starting fires.

8.6. Roads on the range are un-improved surfaces, may vary in condition from road to road and day to day. Most roads on range property require the use of 4-wheel drive. It is the responsibility of program participants to ensure their vehicle is capable of transit on a given road for the given road condition. WGR personnel are not responsible for vehicles that become disabled or are otherwise unable to transit range roads. A stuck or broken down vehicles is the responsibility of the owner to coordinate with range personal for the use of outside agencies for removal when other options of removal have failed.

8.7. Speed limit on WGR is 25MPH unless otherwise marked. Speed limit is 10MPH in parking areas. Slower speeds may be necessary when conditions warrant.

8.8. Seat belts are required to be worn by all vehicle occupants.

8.9. General driving rules: keep right on hills, turns and other areas of limited visibility; slow down around buildings, stopped vehicles, and pedestrians; wear seatbelts; do not drink and drive; slow down when meeting oncoming traffic; slow down when road or weather conditions are poor; do not operate vehicles while wearing hearing protection.

9. GENERAL FIREARM REQUIREMENTS.

9.1. The following procedures apply to personnel using firearms (including bows) under the provisions of this instruction.

9.2. Must comply with governing state and federal regulations on weapon possession, transportation, and use.

9.3. Must have valid firearm permit as required for the weapon in use.

9.4. Spent casings and all weapon materials will be removed from the range.

9.5. Limited target practice shooting is permitted on a case by case basis. Participants are required to supply their own targets. No practice shooting at wildlife, vegetation, or range targets is permitted. All target materials must be removed prior to range exit. Hunting program safety requirements of paragraph 10 apply to target shooting.

10. HUNTING

10.1. New Jersey Department of Environmental Protection (NJDEP) and New Jersey Division of Fish and Game (NJDFG) rules and regulations apply to WGR trespass permit holders.

10.2. Warren Grove Range will be open for deer and small game seasons. The range is located within Zone 24 and follows Deer Regulation Set #0 and is in New Jersey Turkey hunting area #16. WGR trespass permit holders are responsible for ensuring that the proper New Jersey state permits and licenses are obtain prior hunting at Warren Grove Range.

10.3. All firearms will be unloaded and cased while being transported in a vehicle on range until reaching the desired location. Hunting is not permitted from vehicles.

10.4. Weapons should be sited in prior to use.

10.5. Minors and firearms/archery equipment. Each minor carrying a firearm must be escorted by an adult to monitor that minor, remain in positive control and communication with their minor dependent.

10.6. Program participants are responsible for ensuring there is a 250 foot minimum separation between deer stands and/or blinds.

10.7. Each WGR trespass permit hold is permitted to setup to two hunting locations. Tree stands and blinds must be tagged with the hunter's name, permit number, and date. Names are required in case contact is necessary. Dates are required to show when and how long the tree stand or blind has been in place. Participants will remove tree stands and blinds at the end of the respective hunting season. Permanent tree stands are prohibited. Tree stands shall be removed at the conclusion of the hunting season but no later than 2 months after the end of the season. After this period, tree stands may be considered abandoned. Abandoned tree stands may be removed and discarded.

10.7. Use of safety harness is mandatory while hunting from a tree stand.

10.8. Trapping is not permitted on Warren Grove Range.

10.9. Driving, herding, or otherwise funneling animals for the purpose of hunting, is not permitted on Warren Grove Range.

10.10. Baiting/Feeder systems shall be limited to 5 gallon or less in capacity. And will be subject to approval by WGR.

10.11. Harvested animals will be promptly removed or field dressed in place, in a timely manner. Animal carcasses will not be disposed of on range or surrounding range property. All game harvested on Warren Grove Range must be tagged prior to transporting in accordance with New Jersey Division of Fish and Wildlife regulations and checked in at the local checking station for NJDEP accountability.

11. RESTRICTIONS

11.1. Failure to Comply: Violation of any rules, regulations, or laws will result in loss of trespass privileges. Violations by minor dependents (son or daughter under the age of eighteen) will result in the loss of privileges for minor and the parent/legal guardian sponsor.

11.2. Loss of Trespass Privilege.

11.2.1. Safety is of prime importance during all activities while on range. Any person who jeopardizes safety by failing to comply with established rules, regulations and laws,

or who fails to follow the instructions of range personnel, or who fails to exercise good judgment while on range, will have their trespassing privileges revoked.

11.2.2. Participants may not give lock combinations to other personnel, regardless of their standing within this program. WGR trespass permit holders found on Warren Grove Range that have not been logged into the database as having the combination issued to them for the period in question will have their trespassing privileges revoked.

11.2.3. WGR trespass permit holders must sign-in with location and sign-out at trespasser sign-in station when entering or exiting the range. Anyone found on the range without having signed-in may be considered a trespasser and will be prosecuted to the full extent of the law. Program participants who violate range entry, sign-in, or sign-out procedures will have their trespassing privileges revoked.

11.2.4. WGR trespass permit holders must ensure that no flying activities are scheduled prior to entering the restricted access area. Unauthorized presence in the restricted access area will result in program privilege revocation. Unauthorized presence on WGR that results in the loss of training for aircrews will result in permanent privilege revocation.

11.2.5. Taking of any ordnance found on range, even if it appears spent or inert, will have their trespassing privileges revoked.

11.2.6. Individuals displaying a willful disregard for these rules and regulations will be asked to leave the Range and have their WGR trespass permit revoked.

11.3. Prohibitions. The following are prohibited on Warren Grove Range.

11.3.1. Possession, transportation, sale, purchase, or use of alcohol or illegal drugs (or controlled substances)

11.3.2. Operation of a vehicle or possession of a firearm while under the influence of alcohol or a controlled substance.

11.3.3. Smoking except in designated smoking areas. The range is located in a high fire danger area of the New Jersey Pinelands. Smoking within range lands poses a significant fire danger hazard and is strictly prohibited under the provisions of this program.

11.3.4. Misuse of range gates. Misuse includes but is not restricted to: going around or otherwise bypassing range gates, breaking gates and or locks, or providing range gate lock combinations to other persons. Misuse of range gates may be considered illegal, and will be prosecuted to the full extent of the law.

11.3.5. Removal of range property.

11.4. Range Property: All items found Warren Grove Range are considered property of the 177th FW. Under no circumstances will any ordnance, target material, target debris, equipment, or other Government property be taken off of Warren Grove Range. WGR

complex and entrance is under 24 hour video surveillance. Removal will be considered theft and violators will be prosecuted to the full extent of the law.

11.5. Law Enforcement: Federal and state conservations officers will be provided access to the range for law enforcement under the provisions of, and in compliance with, trespass requirements of this instruction. Conservation officers certified in conservation law by the Federal Law Enforcement Training Center or by the State of New Jersey have the authority to enforce applicable fish and wildlife laws on Warren Grove Range property IAW published Memoranda of Agreement with indicated agencies.

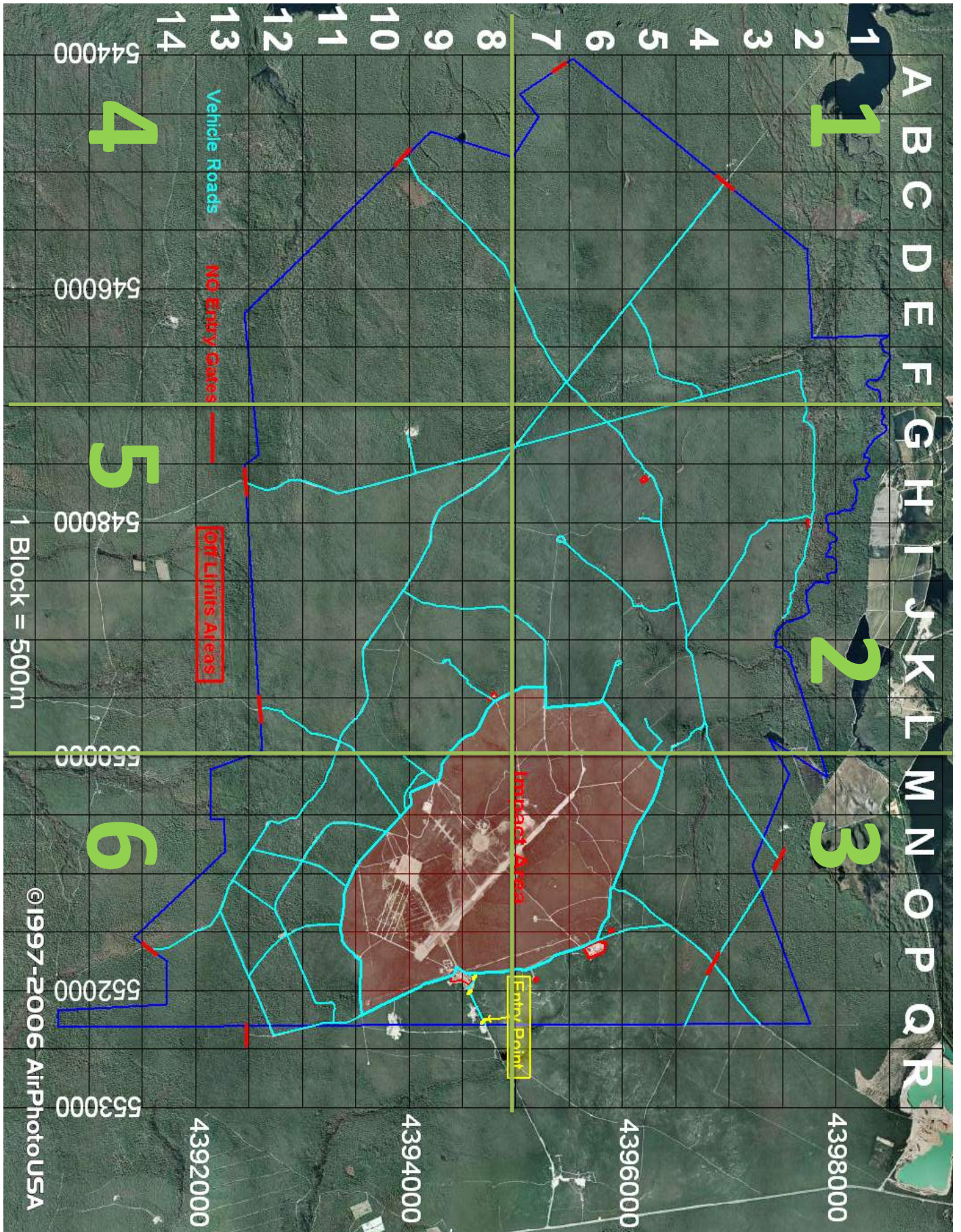
Attachment 1 – Trespass Grid, Restricted Access Area and Vehicle Roads Map

Attachment 2 – Range Entry Diagram

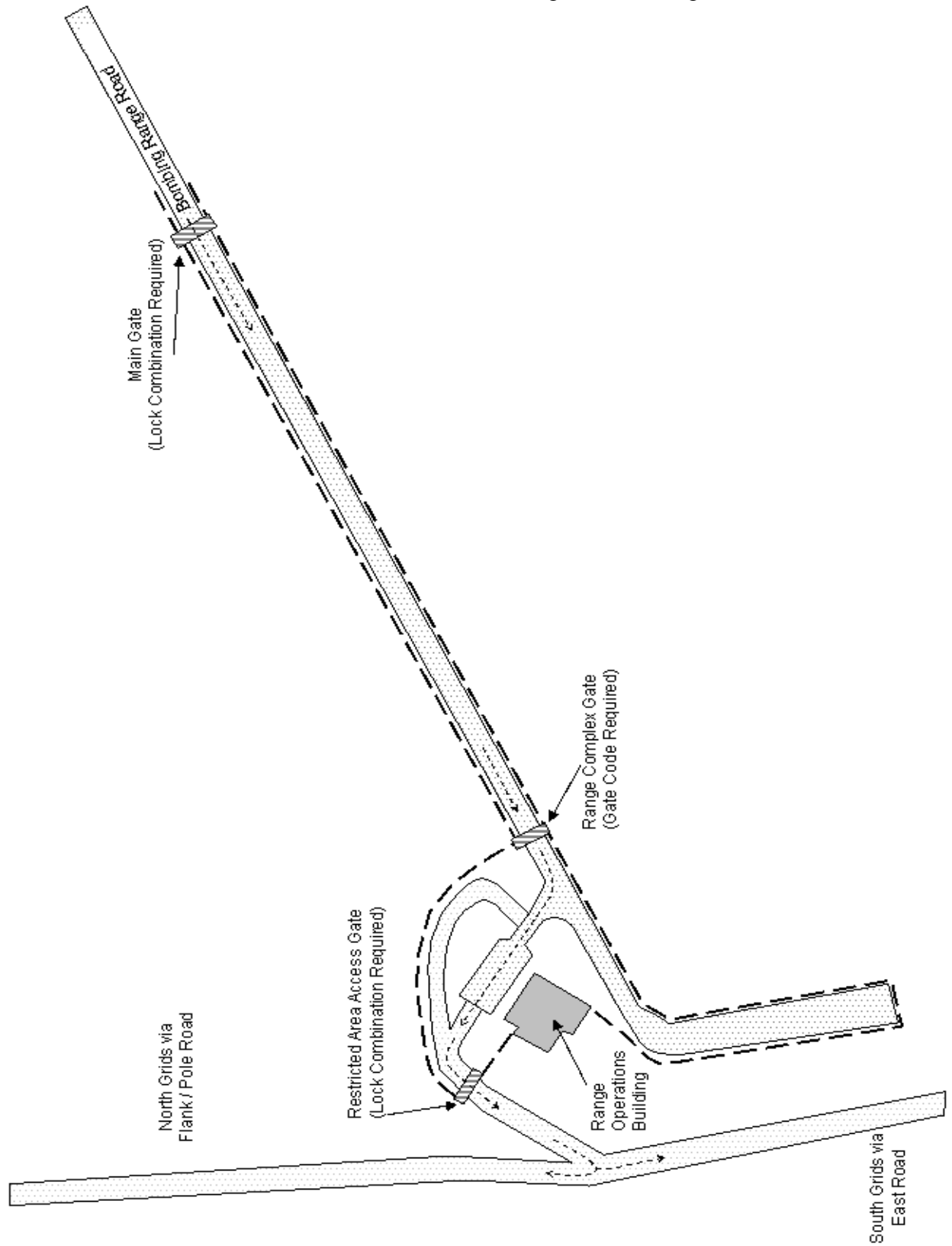
Attachment 3 – Trespass Permit Application and Release Form

Attachment 4 – Trespass Permit

Attachment 1 Trespass Grid, Restricted Access Area and Vehicle Road Map



Attachment 2 Warren Grove Range Access Diagram



Attachment 3 Trespass Permit Application and Release Form

**APPLICATION AND AGREEMENT FOR TRESPASS PERMIT
FOR ACCESS TO WARREN GROVE**

PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 8013

PRINCIPAL PUSPOSE: Used for Application for Recreational Trespass or Hunting Access to Warren Grove Range

ROUTINE USE: 'Blanket Routine Uses'

DISCLOSURE IS VOLUNTARY: However, failure to supply information may result in denial of WGR trespass permit

APPLICATION

NAME _____ PERMIT # _____

ADDRESS _____ VEHICLE MAKE _____

_____ YEAR and MODEL _____

TELEPHONE (H) _____ COLOR _____

(C) _____ LICENSE PLATE# _____

DATE OF BIRTH _____

STATUS: ___MIL ___RET MIL ___DEPENDENT ___Minor (Age ___)

 ___IMMEDIATE FAMILY MEMBER OF: _____

AGREEMENT

KNOW ALL PERSONS BY THESE PRESENT: WHEREBY I, above named, am permitted to enter Warren Grove Range and remain upon United States Government property as of the date this permit is approved only during specifically designated times and that if I am under the age of eighteen (18) that I can only enter when accompanied by a parent or guardian above the age of eighteen (18) years old and whereas I am doing so entirely upon my own initiative, risk and responsibility now, therefore, in consideration of the permission extended to me on United States property, I do hereby, for myself, my family, my heirs, my personal representatives, executors, and assigns, I agree to forever discharge, hold harmless, release, and covenant not to sue the United States Government, the Department of Defense, the United States Air Force, the State of New Jersey, the New Jersey Department of Military and Naval Affairs, the New Jersey Air National, any subdivision thereof, its officers, agents, and employees for any and all claims, demands, actions, or causes of action for any injury, death, damage, cost, expense, or loss of any kind sustained by me or against my property and if co-signing with a person under the age of eighteen (18) for any injury, death, damage, cost, expense, or loss of any kind sustained to any minor dependent that may accompany me or against his or her property under the Federal Torts Claim Act, the New Jersey Torts Claim Act, or under any other law or regulation that would otherwise provide an opportunity to initiate a claim, demand, action, or cause of action. It is my express intent that this Agreement shall bind myself, the members

-CONTINUED ON BACK-

-CONTINUED FROM FRONT-

of my family, estate, heirs, administrators, personal representatives, or assigns, if I am deceased, and shall be deemed as a "Release, Waiver, Discharge and Covenant" not to sue. I also understand and will comply with all applicable federal and state laws and regulations and the 177FW Instruction 34-1004 regulation and consent to video monitoring while on Warren Grove Range. This agreement constitutes the entire agreement, and supersedes any prior or contemporaneous agreements, understandings, and negotiations, if any, regarding this subject matter. If any term or provision of this Agreement shall be held illegal, unenforceable, or in conflict with any law governing this Agreement the validity of the remaining portions shall not be affected thereby. In signing this Agreement, I acknowledge and represent that I have carefully read this Agreement and understand its contents and that I sign this document of my own free act and deed. I understand that I am not required to participate in recreational hunting on the Warren Grove Range, but I want to do so, despite possible dangers and risks, and despite this Agreement. I further state that I am at least eighteen (18) years of age, or, if not, that I have secured below the signature of my parent or guardian as well as my own, and am fully competent to sign this Agreement; and that I execute this agreement and release for full adequate, and complete consideration fully intending to be bound by same.

PERMIT HOLDER (SIGNATURE)
PRINT NAME
DATE

IF PERMIT HOLDER IS BELOW THE AGE OF 18- PARENT OR GUARDIAN MUST ALSO SIGN

PARENT OR GUARDIAN (SIGNATURE)
PRINT NAME
DATE

(MILITARY: THIS IS NOT A WAIVER OF ANY MEDICAL CARE OR GRATUITY BENEFITS)

Attachment 4 Trespass Permit

**WARREN GROVE RANGE
TRESPASS PERMIT
(Adult)**

PERMIT # _____

NAME _____

STATUS _____ EXPIRATION DATE _____

COMMANDER/REPRESENTATIVE

_____ is entitled to access, for hunting purposes, the designated areas of Warren Grove Range, not restricted by the Commander or his representatives, and has signed the required release from Government liability. This permit is valid from the date issued through the expiration date shown above. This permit is valid only within the Range boundaries. Private vehicles authorized on Range only by the Commander or his representative.

**WARREN GROVE RANGE
TRESPASS PERMIT
(Dependant Minor)**

PERMIT # _____

NAME _____

STATUS _____ EXPIRATION DATE _____

COMMANDER/REPRESENTATIVE

_____ is entitled to access, for hunting purposes, the designated areas of Warren Grove Range, not restricted by the Commander or his representatives. Legal parent or guardian _____ Permit # _____ has signed the required release from Government liability and is responsible for minor's actions while on the installation. This permit is valid from the date issued through the expiration date shown above. This permit is valid only within the Range boundaries. Private vehicles authorized on Range only by the Commander or his representative.

Appendix G

Memorandum of Understandings

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LOCAL OPERATING PROCEDURE
BETWEEN
THE PINELANDS COMMISSION
AND
THE UNITED STATES ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

1. Purpose: The purpose of this agreement is to establish procedures to minimize to the maximum extent practical, duplication regarding the delineation of Federal and State regulated waters and wetlands located within the Pinelands Area (N.J.S.A. 13:18A-11 et seq.).

2. Applicability/Authority: Federal and State regulated waters and wetlands within the New Jersey Pinelands Area (see attached map).

a. Section 404 of the Clean Water Act.

b. Lands under the jurisdiction of the Pinelands Commission within the New Jersey Pinelands Area pursuant to the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.).

3. Procedure:

a. Upon the effective date of this agreement, the Pinelands Commission will be the lead agency with respect to the verification of delineations of waters and wetlands within the geographic boundaries of the New Jersey Pineland Area. Requests/inquiries regarding these delineations received by the U.S. Army Corps of Engineers will be forwarded to the Pinelands Commission. The applicant will be advised of his/her need to apply to the Pinelands Commission for the verification of the delineation.

b. Delineations verified by the Pinelands Commission will be accepted by the U.S. Army Corps of Engineers as accurate delineations of Federally regulated waters and wetlands within the geographic boundaries of the New Jersey Pinelands Area except as provided in c below.

c. If there is an unusual circumstance concerning a jurisdictional determination, the parties to this agreement retain authority to independently or jointly establish their respective jurisdictional boundaries. The parties may also request from each other copies of any technical information used in the establishment of the waters and wetlands.

d. The Pinelands Commission and the Corps of Engineers both utilize methodologies that examine vegetation, hydrology, and soils to verify or establish wetland delineations. Each agency will utilize its own methodology and regulations in determining wetland boundaries.

e. This agreement does not pertain to the delineations of waters and wetlands concerning enforcement actions (permitless discharges). All parties to this agreement retain authority to independently establish jurisdictional boundaries under these circumstances.

f. Nationwide permit requests received by the U.S. Army Corps of Engineers will be reviewed for the proposal's applicability for authorization under the nationwide permit program. That determination will be conveyed to the applicant in writing. In accordance with paragraphs a and b above, requests for the verification or delineation of waters and wetlands received in conjunction with nationwide permit requests will be forwarded to the Pinelands Commission. The applicant will be advised of his/her need to have the wetland line established in the field prior to requesting that the Pinelands Commission verify the delineation.

g. After completing the verification of waters and wetlands, the Pinelands Commission will request a survey of the wetland delineation. The Pinelands Commission will verify and confirm the accuracy of that survey in writing to the applicant. The Pinelands Commission will include in their confirmation letter a statement that the Corps of Engineers accepts the jurisdictional delineation verified by the Pinelands Commission.

h. Upon verification of the survey of the delineation of waters and wetlands, the Pinelands Commission will provide the U.S. Army Corps of Engineers with the following:

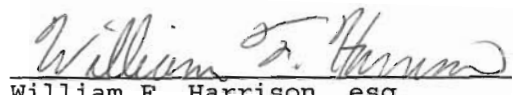
- (1) One copy of the confirmation letter;
- (2) A description of the title block, of the survey which describes the limits of the regulated waters and wetlands on the property;
- (3) A copy of the final, approved survey of the limits of the regulated waters and wetlands on the property;
- (4) One copy of the technical information submitted by the applicant used in establishing the boundaries of waters and wetlands.

4. This agreement does not limit the authority of the Pinelands Commission as established by the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.) and the New Jersey Pinelands Comprehensive Management Plan (N.J.A.C. 7;50-1.1 et seq.).

5. This agreement will be effective on the date of the final signature below and will continue until modified or revoked by agreement of all parties or until revoked by any party alone upon written notice.



Frank J. Cianfrani
Chief, Regulatory Branch
U.S. Army Corps of Engineers
Philadelphia District

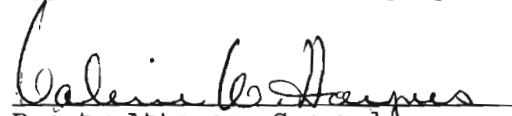


William F. Harrison, esq.
Acting Executive Director
Pinelands Commission

11/22/99
Date

2/18/00
Date

Approved as to form only by:



Deputy Attorney General
State of New Jersey

Attachment

MEMORANDUM OF UNDERSTANDING BETWEEN
177TH FIGHTER WING
AND
NEW JERSEY STATE POLICE
FOR WARREN GROVE RANGE SUPPORT

This is a Memorandum of Understanding (MOU) between the 177th Fighter Wing, New Jersey Air National Guard; hereinafter, 177 FW, and the New Jersey State Police; hereinafter, NJSP. When referred to collectively, the 177 FW and the NJSP are referred to as the “Parties”.

1. BACKGROUND: To enable prompt response by the NJSP to support the 177 FW in the event of a law enforcement or security emergency at Warren Grove Range located in Burlington County. The Warren Grove Range military compound does not have a proprietary security force available to react to, and not limited by, intrusion detection alarm, an active shooter event, hostage negotiation, barricaded subjects or other potential adverse event.

2. PURPOSE: To clarify procedures for NJSP Tuckerton Barracks response to Warren Grove Range.

3. UNDERSTANDINGS OF THE PARTIES:

3.1. The 177 FW will:

3.1.1. Provide NJSP with two perimeter gate keys, two building keys and two electronic access cards to gain admittance to Warren Grove Range and all of the facilities.

3.2. The NJSP will:

3.2.1. Provide police response to Warren Grove Range when need is expressed or implied if circumstances create a reasonable affirmative duty to act.

3.2.2. Provide an initial status assessment, then situational update(s) to the Base Defense Operations Center (609-761-6222) during an event response as warranted.

4. PERSONNEL: Each named Party is responsible for all costs of its personnel, including pay and benefits, support, travel, and any other costs incidental to duty. Parties are responsible for supervision and management of their personnel.

5. GENERAL PROVISIONS:

5.1. FUNDS AND MANPOWER: This MOU does not document nor provide for the exchange of funds or manpower between the Parties nor does it make any commitment of funds or resources.

5.2. MODIFICATION OF MOU: This MOU may only be modified by the written agreement of the Parties, duly signed by their authorized representatives. This MOU will be reviewed and revised as necessary annually on or around the anniversary of its effective date, and triennially in its entirety.

5.3. DISPUTES: Any disputes relating to this MOU will, subject to any applicable law, Executive order, directive, or instruction, be resolved by consultation between the Parties or in accordance with DoDI 4000.19.


5.4. TERMINATION OF UNDERSTANDING: This MOU may be terminated in writing at will by either Party.

5.5. TRANSFERABILITY: This MOU is not transferable except with the written consent of the Parties.

5.6. ENTIRE UNDERSTANDING: It is expressly understood and agreed that this MOU embodies the entire understanding between the Parties regarding the MOU's subject matter.

5.7. EFFECTIVE DATE: This MOU takes effect beginning on the day after the last Party signs.

5.8. EXPIRATION DATE: This MOU does not expire at a set date or event.


JOHN R. DIDONNA, Colonel, NJANG
Commander, 177th Fighter Wing

Date: 20 Jan 2016

JOSEPH R. FUENTES, Colonel
Superintendent, New Jersey State Police

Date: _____

177TH FW/DET-1 WARREN GROVE BOMBING RANGE
STATION 424

MEMORANDUM OF UNDERSTANDING IN FIRE PROTECTION RESPONSE (US)

This agreement, entered into this 15th day of December 2007, between the 177th FW Commander and the New Jersey Forest Fire Service (NJFFS) acknowledges the benefits of fire prevention, detection, response, pre-suppression, hazardous fuel reduction and suppression of wildfires while providing for the protection of life and property within and adjacent to the boundaries of the Warren Grove Bombing Range.

a. It is understood that:

- (1) There is no established fire department at the Warren Grove Bombing Range.
- (2) There is no intent that Warren Grove Range personnel would, or are capable of providing, any fire fighting actions outside the boundaries of their Range, except for those life saving actions that would be prudent for any competent individual.
- (3) Personnel assigned to the Warren Grove Range are able to provide initial response and initial attack fire fighting actions within the Warren Grove Bombing Range. It is expected that if a wildfire within the boundaries of the Warren Grove Range expands beyond the limited capability of Warren Grove Range personnel, the NJFFS would be requested to assist in the suppression of the wildfire. At this point, a Unified Command would be established between 177th FW/DET-1 Fire Chief or his/her representative and the NJFFS in order to facilitate the coordination of prudent supporting actions within each Unified Commander's jurisdictional boundaries, and maximize information cross-flow to enhance situation reports to organizational Higher Headquarters. Overall Incident Command will be transferred to the NJFFS upon arrival of their Incident Commander.
- (4) Any request for aid by Warren Grove Range personnel may include a statement of the amount and type of equipment and personnel requested and should specify the location to which the equipment and number of personnel are to be dispatched; however, the amount and type of equipment and number of personnel to be furnished shall be determined by a representative of the NJFFS.
- (5) Due to the unique operational environment of the Warren Grove Range and the associated potential of encountering Explosive Ordnance and Hazardous Materials, when responding to wildfires within the confines of Warren Grove Bombing Range, firefighters may come in contact with inert ordnance, unexploded live ordnance, as well as various hazardous materials including, but not limited to: Liquid Oxygen, Hydrazine, aviation fuels and lubricants, and burning composite materials until the site is cleared of hazardous materials and explosive ordnance or deemed safe by competent military authorities. Disregarding these potential dangers may cause severe injury and/or death. Therefore, in accordance with safety guidelines, personnel advancing into the weapons impact area must have a current annual Range Safety Brief.

177TH FW/DET-1 WARREN GROVE BOMBING RANGE

STATION 424

i. Personnel responding to calls for aid that have not received an initial Range Safety Brief and/or have not received same within the previous 12 months, will be given a Range Safety Brief prior to advancing into the weapons impact area.

ii. Warren Grove personnel will provide, upon request, initial and/or annual refresher Range Safety Briefs as well as provide additional electronic copies of the Range Safety Brief to the NJFFS. To facilitate dissemination, this brief may be administered by the NJFFS organizational leadership or designated representatives.

iii. Warren Grove or the 177FW shall not be responsible for injuries incurred by individuals who enter Warren Grove Range property and associated weapons impact areas without meeting this annual Safety Brief requirement or by individuals who disregard warnings, cautions and dangers enumerated in the Safety Brief.

(5) The responding organization(s) shall be released by the Incident Commander when the services of the responding organization(s) are no longer required or when the responding organization(s) is needed within the area for which it normally provides fire protection as directed by the responding organization's Higher Headquarters or designated representative thereof.

(6) In the event of a crash of an aircraft owned or operated by the United States or military aircraft of any foreign nation within the Warren Grove Range property boundaries, a Unified Command will be established with the 177th FW/DET-1 Fire Chief or his or her representative assuming full command on arrival at the scene of the actual crash site and the NJFFS assuming full command of the wildfire associated with the crash. Due to the unique dangers associated with the immediate environment of military aircraft crash sites, the NJANG shall retain command of the immediate crash site until the site is cleared of hazardous materials and explosive ordnance or deemed safe by competent military authorities.

(7) In the event of a crash of an aircraft owned or operated by the United States or military aircraft of any foreign nation within the area for which the NJFFS normally provides fire protection, a Unified Command will be established with the 177th FW/DET-1 Fire Chief or his/her representative assuming full command on arrival at the scene of the actual crash site and the NJFFS assuming full command of the wildfire associated with the crash. Due to the unique dangers associated with the immediate environment of military aircraft crash sites, the NJFFS will allow the NJANG to retain command of the immediate crash site until the site is cleared of hazardous materials and explosive ordnance or deemed safe by competent military authorities.

b. The NJFFS may claim reimbursement for the direct expenses and losses that are additional fire fighting costs above their normal operating cost incurred while fighting a fire under this agreement as provided in 44 C.F.R., Part 151, *Reimbursement for Costs of Firefighting on Federal Property*.

c. To the extent authorized by the New Jersey Contractual Liability Act, the New Jersey Torts Claim Act and the New Jersey State Constitution, each party waives all claims against every other party for compensation for any loss, damage, personal injury, or death occurring as a

177TH FW/DET-1 WARREN GROVE BOMBING RANGE
STATION 424

consequence of the performance of this memorandum of understanding. This provision does not waive any right of reimbursement pursuant to paragraph b above.

e. All equipment used by the NJFFS in carrying out this understanding will, at the time of action hereunder, be owned by it, and all personnel acting for the NJFFS under this agreement will, at the time of such action, be an employee or volunteer member of the NJFFS.

f. It is mutually agreed and understood by all parties that:

(1) **MODIFICATION:** Modifications within the scope of the understanding shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being performed.

(2) **TERMINATION:** Any of the parties, in writing, may terminate the instrument in whole, or in part, at any time.

177TH FW/DET-1 WARREN GROVE BOMBING RANGE
STATION 424

APPROVALS:

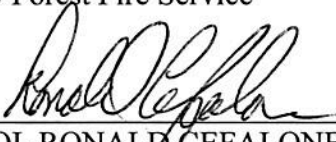
The 177 FW is the originator of this Memorandum of Understanding (MOU). Each command or facility shall have an original individual signature page to be retained on file for their records. The 177 FW shall retain each individual signature page, from each command or facility, and maintain them on file at 177 FW OG/CC NJANG.



MARIS G. GABLIKS
State Firewarden
NJ Forest Fire Service



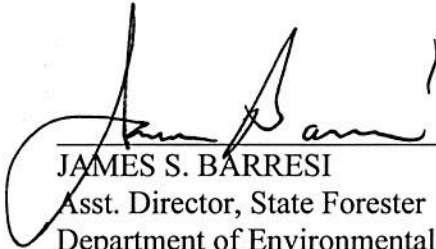
COL ROBERT C. BOLTON
177 FW/OG/CC



COL RONALD CEFALONE
USP&FO for New Jersey



COL RANDALL S. KING
177 FW/CC



JAMES S. BARRESI
Asst. Director, State Forester
Department of Environmental Protection
NJ Division of Parks & Forestry



MG GLENN K. RIETH
THE ADJUTANT GENERAL