Integrated Natural Resources Management Plan (INRMP) Jacksonville Air National Guard Base

2019

Prepared for:

Air National Guard
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

Florida Air National Guard
Jacksonville Air National Guard Base
14300 Fang Drive
Jacksonville, FL 32218

Under Cooperative Agreement With:
Department of the Army
Corps of Engineers, Omaha
District 1616 Capital Avenue
Omaha, NE 68102

Cooperative Agreement:
W9128F-16-2-0021-0008

Prepared by:

Texas A&M Natural Resources Institute
578 John Kimbrough
Boulevard 2260 TAMU
College Station, TX 77843

SIGNATURE PAGE

The Jacksonville Air National Guard Base (Jacksonville ANGB) Integrated Natural Resources Management Plan (INRMP) has been prepared for the 125 Fighter Wing (125 FW) to manage significant natural resources in support of the military mission. Significant natural resources include the presence of federal and state-listed species, and the presence of Waters of the United States including wetlands. The Jacksonville ANGB INRMP meets the intent of the Sikes Act (16 US Code [USC] § 670a–670l, 74 Stat. 1052).

To the extent that resources permit, the US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), and the Florida Air National Guard (FANG) by signature of their agency representative, do hereby enter into a cooperative agreement for the conservation, protection, and management of natural resources present on Jacksonville ANGB. The agreement may be modified and amended by mutual agreement of the authorized representatives of the 3 agencies. This agreement will become effective upon the date of the last signatory and shall continue in full force for a period of 5 years or until terminated by written notice to the other parties, in whole or in part, by any of the parties signing the agreement.

By their signatures below, or an enclosed letter of concurrence, all parties grant their concurrence with and acceptance of the following document.

Approving Officials:

R. W. C. — 15 Nov 19.

Colonel Richard L. Coffey III
Florida Air National Guard
Commander, Jacksonville Air National Guard Base

Date

Acting for — 11/21/19

Jay Herrington
US Fish and Wildlife Service
Supervisor, North Florida Ecological Services Field Office

Date

Thomas H. Eason — 10/24/19

Eric Sutton
Florida Fish and Wildlife Conservation Commission
Executive Director

Date

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 125TH FIGHTER WING (ACC)
JACKSONVILLE, FLORIDA

18 June 2020

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE

FROM: 125 CES/CEV

SUBJECT: Annual Review – Integrated Natural Resources Management Plan (INRMP)
125 FW, Florida Air National Guard, Jacksonville, Florida

Ms. Annie Dziergowski:

On 21Nov19, the U.S. Fish and Wildlife Service signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This letter is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

Please let me know if you have any follow up comments to the 125FW, Florida Air National Guard. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your earliest convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.e.wynn.civ@mail.mil.

RUTHEL E. WYNN, JR, GS-12, DAF
Environmental Manager

3 Attachments:
1. Jacksonville ANG Final INRMP – Nov 2019
2. 125FW INRMP Annual Review 2020 (Signatory Page)
3. E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG

WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV

From: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Sent: Tuesday, August 18, 2020 7:43 AM
To: 'annie_dziergowski@fws.gov'
Cc: PARISH, KATHY M CIV USAF ANG 125 LRS/EMO; POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC
Subject: FW: 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2020 - USFWS
Attachments: INRMP Annual Review USFWS - 2020.pdf; Jacksonville ANG Final INRMP - Nov 2019.pdf; 125FW INRMP Annual Review 2020 (Signatory Page).pdf; E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG.pdf

Importance: High

Good Morning Ms. Dziergowski,
I am writing to follow up on the annual review of the 125FW INRMP. Please advise if you would like to comment on the document as part of this year's review.

Thank You,
Rudy

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM
Environmental Manager
125FW – FL ANG
Comm (904) 741-7410
DSN 641-7410

From: WYNN, Ruthel E (Rudy) JR CIV NG FLANG (USA)
Sent: Thursday, June 18, 2020 9:43 AM
To: 'annie_dziergowski@fws.gov' <annie_dziergowski@fws.gov>
Cc: Parish, Kathy M NFG (USA) <kathy.m.parish.nfg@mail.mil>; Poland, John R Lt Col USAF 167 AW (USA) <john.r.poland4.mil@mail.mil>
Subject: 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2020 - USFWS
Importance: High

Good Morning Ms. Dziergowski:

On 21Nov19, the U.S. Fish and Wildlife Service signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This letter is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

Work Plans FY 2020 (pg. 50) have been addressed and, as noted in Attachment 4, we are budgeting and contracting out efforts on two projects for the Work Plans FY 2021 (pg. 51).

Please review and let me know if you have any follow up comments to the 125FW, Florida Air National Guard INRMP as requested. If not comments, sign/date the Signatory Page (Attachment 3) and return to me at your earliest opportunity. If no response is received, I'll assume your agency is still in concurrence with the original

document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.e.wynn.civ@mail.mil.

Rudy

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM
Environmental Manager
125FW – FL ANG
Comm (904) 741-7410
DSN 641-7410

4 Attachments:
1. Letter – INRMP Annual Review USFWS - 2020
2. Jacksonville ANG Final INRMP – Nov 2019
3. 125FW INRMP Annual Review 2020 (Signatory Page)
4. E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 125TH FIGHTER WING (ACC)
JACKSONVILLE, FLORIDA

18 June 2020

MEMORANDUM FOR FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

FROM: 125 CES/CEV

SUBJECT: Annual Review – Integrated Natural Resources Management Plan (INRMP)
125 FW, Florida Air National Guard, Jacksonville, Florida

Ms. Ginger Morgan:

On 24Oct19, The Florida Fish and Wildlife Conservation Commission signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This letter is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

Please let me know if you have any follow up comments to the 125FW, Florida Air National Guard. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your earliest convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.e.wynn.civ@mail.mil.

RUTHEL E. WYNN, JR, GS-12, DAF
Environmental Manager

3 Attachments:
1. Jacksonville ANG Final INRMP – Nov 2019
2. 125FW INRMP Annual Review 2020 (Signatory Page)
3. E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG

Florida Fish and Wildlife Conservation Commission

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850-487-3796
850-921-5786 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

July 10, 2020

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM,
Environmental Manager
Florida Air National Guard
14300 Fang Drive
Jacksonville, FL 32218
ruthel.e.wynn.civ@mail.mil

RE: Annual Review: Integrated Natural Resources Management Plan for the Florida Air National Guard in Duval County, Florida (41976)

Dear Mr. Wynn,

Florida Fish and Wildlife Conservation Commission (FWC) staff participated in the 2020 annual review of the Integrated Natural Resources Management Plan (INRMP) for the Florida Air National Guard Jacksonville on June 24, 2020, in accordance with FWC's authorities under the Coastal Zone Management Act/Coastal Management Program and the Sikes Act.

FWC staff participation in the 2020 annual review of the INRMP fulfills the requirements of the Sikes Act. We commend the staff at the Florida Air National Guard Jacksonville for the habitat management applications that benefit multiple wildlife species and their associated habitat. We encourage you to contact us if you need any additional wildlife or habitat-related information to support base operations, public awareness, or future wildlife monitoring efforts.

Thank you again for engaging the FWC and allowing our staff to assist with the annual review of the INRMP, and in continuing to foster our long-term, productive partnership. If you need further assistance, please do not hesitate to contact our office by email at ConservationPlanningServices@MyFWC.com. If either your agency or representatives have specific questions regarding the content of this letter, please contact Ginger Morgan by phone at (386) 754-6244 or by email at Ginger.Morgan@MyFWC.com.

Sincerely,

Anthony T. Grossman

Anthony T. Grossman
Landowner Assistance Program Administrator
Office of Conservation Planning Services

ag/gm
Enclosure
Jacksonville ANGB_2020_INRMP_Annual Review_41976_07102020

Cc: Parish, Kathy M NFG (USA) kathy.m.parish.nfg@mail.mil
Poland, John R Lt Col USAF 167 AW (USA) john.r.poland4.mil@mail.mil

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2020

WYNN.RUTHEL.EARL.JR.1203326927

Digitally signed by WYNN.RUTHEL.EARL.JR.1203326927
Date: 2020.06.18 08:23:09 -04'00'

[Mr. Ruthel E. Wynn, Jr. PMP, REM 125FW Environmental Manager]
Jacksonville ANGB

Date

[Ms. Annie Dziergowski USFWS]
US Fish and Wildlife Service

Date

Anthony T. Grossman

July 10, 2020

Mr. Anthony Grossman, FWC]
Florida Fish and Wildlife Conservation Commission

Date

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 125TH FIGHTER WING (ACC)
JACKSONVILLE, FLORIDA

19 July 2021

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE

FROM: 125 CES/CEV

SUBJECT: Annual Review – Integrated Natural Resources Management Plan (INRMP)
125 FW, Florida Air National Guard, Jacksonville, Florida

Ms. Annie Dziergowski:

On 21Nov19, the U.S. Fish and Wildlife Service signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This letter is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

Please let me know if you have any follow up comments to the 125FW, Florida Air National Guard. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your earliest convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.wynn.1@us.af.mil.

RUTHEL E. WYNN, JR, GS-12, DAF
Environmental Manager

3 Attachments:
1. Jacksonville ANG Final INRMP – Nov 2019
2. 125FW INRMP Annual Review 2021 (Signatory Page)
3. E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG

From:	Myers, Brendan T
To:	WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Cc:	Dziergowski, Annie; Putnam, Christopher; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO; POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC
Subject:	[Non-DoD Source] 125FW - FL Air National Guard (Jacksonville, FL) 2021 INRMP Annual Review
Date:	Wednesday, September 8, 2021 12:23:37 PM
Attachments:	125FW INRMP Annual Review 2021 (Signatory Page) USFWS Signed.pdf

Good morning,

I have reviewed the documents provided for the 125FW 2021 INRMP Annual Review. Attached is a signed copy of the 125FW INRMP Annual Review Signature Page. I apologize in advance if some of the comments below appear a bit pedantic or if you have previously covered these items with other USFWS biologists. I recently started in this role and my only familiarity with the 125FW is through this INRMP review. I have the following comments:

- The document references AFI 32-7064. To my knowledge, this AFI has been replaced by AFMAN 32-7003 *Environmental Conservation* in April 2020. I recommend updating the document to reflect this change.
- The Service supports and commends the installation's efforts to implement a tree survey to determine stand inventory and fire breaks. Additionally, an invasive plant species survey and development of an Invasive Species Management Plan will further the installation's goal to promote natural resources management and protect sensitive wildlife habitats.
- Please be aware that the eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*) was recently listed as federally threatened in November 2020 and has the possibility to occur within the vicinity of the installation. Even though the installation does not currently have the correct habitat type (salt and freshwater high marsh), areas surrounding the installation could have the correct habitat type to support this species as either a migratory species or a year-round resident - providing potential BASH-related issues. Further information regarding this species can be found at the following link (https://ecos.fws.gov/ecp/species/10477).
- Acoustic bat surveys results can be uploaded into the USGS North American Bat Monitoring Program (NABat) to assist in the conservation of North American bat populations. Multiple Air Force installations throughout Florida have begun to upload previous acoustic bat monitoring results into this database. Further information can be found in the following link (https://sciencebase.usgs.gov/nabat/#/home).

Is there an in-person meeting or teleconference scheduled for this review? Furthermore, the Service does not express an interest in executing projects in the FY21 Annual Work Plan.

Please do not hesitate to reach out with questions to any of the above comments or for assistance with future projects related to natural resources and T&E species management at the 125FW.

Thanks and stay safe!

Brendan Myers
Regulatory Biologist
U.S. Fish and Wildlife Service
Florida Ecological Services Office
7621 Hillsborough Loop Drive
MacDill AFB, FL 33621
Cell: 850-348-6560

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 125TH FIGHTER WING (ACC)
JACKSONVILLE, FLORIDA

19 July 2021

MEMORANDUM FOR FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

FROM: 125 CES/CEV

SUBJECT: Annual Review – Integrated Natural Resources Management Plan (INRMP)
125 FW, Florida Air National Guard, Jacksonville, Florida

Mr. Anthony Grossman:

On 24Oct19, The Florida Fish and Wildlife Conservation Commission signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This letter is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

Please let me know if you have any follow up comments to the 125FW, Florida Air National Guard. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your earliest convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.wynn.1@us.af.mil.

RUTHEL E. WYNN, JR, GS-12, DAF
Environmental Manager

3 Attachments:
1. Jacksonville ANG Final INRMP – Nov 2019
2. 125FW INRMP Annual Review 2021 (Signatory Page)
3. E-Mail - 2021 Natural Resources Projects - 125FW, FL ANG

Florida Fish and Wildlife Conservation Commission

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620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

August 12, 2021

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM, Environmental Manager
Florida Air National Guard
14300 Fang Drive
Jacksonville, FL 32218
ruthel.wynn.1@us.af.mil

RE: Annual Review: Integrated Natural Resources Management Plan for the Florida Air National Guard in Duval County, Florida (44992)

Dear Mr. Wynn,

Florida Fish and Wildlife Conservation Commission (FWC) staff participated in the 2021 annual review of the Integrated Natural Resources Management Plan (INRMP) for the Florida Air National Guard Jacksonville on August 10, 2021, in accordance with FWC's authorities under the Coastal Zone Management Act/Coastal Management Program and the Sikes Act.

FWC staff participation in the 2021 annual review of the INRMP fulfills the requirements of the Sikes Act. We commend the staff at the Florida Air National Guard Jacksonville for the habitat management applications that benefit multiple wildlife species and their associated habitat. We encourage you to contact us if you need any additional wildlife or habitat-related information to support base operations, public awareness, or future wildlife monitoring efforts.

Thank you again for engaging the FWC and allowing our staff to assist with the annual review of the INRMP, and in continuing to foster our long-term, productive partnership. If you need further assistance, please do not hesitate to contact our office by email at ConservationPlanningServices@MyFWC.com. If either your agency or representatives have specific questions regarding the content of this letter, please contact Megan Ellis by phone at (352) 339-3016 or by email at Megan.Ellis@MyFWC.com.

Sincerely,

Anthony T. Grossman
Landowner Assistance Program Administrator
Office of Conservation Planning Services

ag/me Enclosure
Jacksonville ANGB_2021_INRMP_Annual Review_44992_08122021

CC: Parish, Kathy M NFG (USA) kathy.m.parish.nfg@mail.mil
Poland, John R. Lt. Col USAF 167 AW (UUSA) john.r.poland4.mil@mail.mil

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2021

WYNN.RUTHEL.EARL.JR.1203326927 Digitally signed by WYNN.RUTHEL.EARL.JR.1203326927 Date: 2021.07.19 08:10:01 -04'00'

[ ] Date

Jacksonville ANGB

[ ] Date

US Fish and Wildlife Service

Anthony T. Grossman 8/12/2021

[ ] Date

Florida Fish and Wildlife Conservation Commission

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2021

WYNN.RUTHEL.EARL.JR.1203326927 Digitally signed by WYNN.RUTHEL.EARL.JR.1203326927 Date: 2021.07.19 08:10:01 -04'00'

[ ] Date

Jacksonville ANGB

BRENDAN MYERS Digitally signed by BRENDAN MYERS Date: 2021.09.08 12:09:59 -04'00'

[ ] Date

US Fish and Wildlife Service

[ ] Date

Florida Fish and Wildlife Conservation Commission

From:	WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
To:	Myers, Brendan T; Dziergowski, Annie; Putnam, Christopher
Cc:	POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO
Subject:	125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS
Date:	Friday, July 15, 2022 6:56:00 AM
Attachments:	2019Nov15_125FW_Jacksonville ANG Final INRMP.pdf 125FW INRMP Annual Review 2022 (Signatory Page).pdf

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Good Morning Mr. Myers:

On 21Nov19, the U.S. Fish and Wildlife Service signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties as required by the Sikes Act. This e-mail is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

An Invasive Species Study was conducted on the installation in May 2022 and The Environmental Management Office is awaiting the contractor's final report, as well as the Invasive Species Management Plan. This project was outlined in the FY2021 Work Plan (pg. 51). We are currently pursuing the funding to conduct a tree inventory of the Jacksonville ANG site to obtain baseline information on the extent of forested areas and timber resources, and develop GIS layers reflecting inventory results for use in planning. This project is outlined in the FY2022 Work Plan (pg. 52).

Please review and let me know if you have any follow up comments to the 125FW, Florida Air National Guard INRMP as requested. If you do not have comments, please sign/date the Signatory Page (Attachment 3) and return to me at your earliest opportunity. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.wynn.1@us.af.mil <mailto:ruthel.wynn.1@us.af.mil>.

Rudy

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM
Federal Environmental Manager
125FW - FL ANG
Comm (904) 741-7410
DSN 641-7410
ruthel.wynn.1@us.af.mil

From: Myers, Brendan T
To: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Subject: [Non-DoD Source] Re: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS
Date: Wednesday, August 31, 2022 11:58:23 AM
Attachments: 125FW INRMP Annual Review 2022 (Signatory Page) fws Signed.pdf

---

Hey Rudy,

I apologize for it being the last day to get you back the signature page. It is attached to this email and the Service has no further comments regarding the installation's INRMP. The Service greatly appreciates the 125FW's continued commitment to natural resource management.

Please let me know if you have any additional comments or questions.

Thanks!

Brendan Myers
Regulatory Biologist
U.S. Fish and Wildlife Service
Florida Ecological Services Office
7621 Hillsborough Loop Drive
MacDill AFB, FL 33621
Cell: 850-348-6560
Office: 904-731-3328

From: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Sent: Friday, July 29, 2022 06:44
To: Myers, Brendan T
Subject: RE: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Thanks much. Have a great weekend!
Rudy

-----Original Message-----
From: Myers, Brendan T <brendan_myers@fws.gov>
Sent: Friday, July 29, 2022 6:36 AM
To: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV <ruthel.wynn.1@us.af.mil>
Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC <john.poland.1@us.af.mil>; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO <kathy.parish@us.af.mil>; Dziergowski, Annie <annie_dziergowski@fws.gov>
Subject: [Non-DoD Source] Re: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Sounds good. I'll work to get you any comments and the signature page within a week.

Thanks!

Brendan Myers

Regulatory Biologist

U.S. Fish and Wildlife Service

Florida Ecological Services Office

7621 Hillsborough Loop Drive

MacDill AFB, FL 33621

Cell: 850-348-6560

Office: 904-731-3328

From: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Sent: Friday, July 29, 2022 06:26
To: Myers, Brendan T
Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO; Dziergowski, Annie
Subject: RE: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Good Morning Brendan,
That is correct. There have been no changes locally on the base and therefore none required in the document. We've just been working to get the funding to complete as many projects as we can in the work plans.

Thanks for tackling this so promptly. I really appreciate it.
Rudy

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM
Federal Environmental Manager
125FW - FL ANG
Comm (904) 741-7410

DSN 641-7410
ruthel.wynn.1@us.af.mil

-----Original Message-----
From: Myers, Brendan T <brendan_myers@fws.gov>
Sent: Thursday, July 28, 2022 4:12 PM
To: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV <ruthel.wynn.1@us.af.mil>
Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC <john.poland.1@us.af.mil>; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO <kathy.parish@us.af.mil>; Dziergowski, Annie <annie_dziergowski@fws.gov>
Subject: [Non-DoD Source] Re: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Hey Rudy,

I've been able to go through the INRMP and I just want to make sure I didn't miss anything. Apart from the information in your original email, there were no updates to the document correct?

Thanks!

Brendan Myers

Regulatory Biologist

U.S. Fish and Wildlife Service

Florida Ecological Services Office

7621 Hillsborough Loop Drive

MacDill AFB, FL 33621

Cell: 850-348-6560

Office: 904-731-3328

From: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
Sent: Monday, July 18, 2022 10:14
To: Myers, Brendan T; Dziergowski, Annie; Putnam, Christopher

Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO
Subject: RE: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Good Morning Brendan -
Thanks for getting back to me so quickly. We are shooting to have comments in-house by September 1.

Rudy

-----Original Message-----
From: Myers, Brendan T <brendan_myers@fws.gov>
Sent: Monday, July 18, 2022 10:08 AM
To: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV <ruthel.wynn.1@us.af.mil>; Dziergowski, Annie <annie_dziergowski@fws.gov>; Putnam, Christopher <christopher_putnam@fws.gov>
Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC <john.poland.1@us.af.mil>; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO <kathy.parish@us.af.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

Hey Rudy,

I'll get to this as soon as I can, I was on leave last week and playing catch up right now.

Is there a deadline to have comments and/or the signatory page transmitted to you? I want to make sure the Service is not delaying this review.

Thanks!

Brendan Myers

Regulatory Biologist

U.S. Fish and Wildlife Service

Florida Ecological Services Office

7621 Hillsborough Loop Drive

MacDill AFB, FL 33621

Cell: 850-348-6560

Office: 904-731-3328

From: WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV <ruthel.wynn.1@us.af.mil>
Sent: Friday, July 15, 2022 06:58
To: Myers, Brendan T <brendan_myers@fws.gov>; Dziergowski, Annie <annie_dziergowski@fws.gov>; Putnam, Christopher <christopher_putnam@fws.gov>
Cc: POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC <john.poland.1@us.af.mil>; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO <kathy.parish@us.af.mil>
Subject: [EXTERNAL] 125FW, FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - USFWS

From:	WYNN, RUTHEL E JR GS-12 USAF ANG 125 CES/CEV
To:	Grossman, Anthony
Cc:	Feagle, Ginger; Ellis, Megan; conservationplanningservices@MyFWC.com; POLAND, JOHN R Lt Col USAF ANG 125 CES/CE/CC; PARISH, KATHY M CIV USAF ANG 125 LRS/EMO
Subject:	FL Air National Guard (Jacksonville, FL) INRMP Annual Review 2022 - FWC
Date:	Friday, July 15, 2022 7:03:00 AM
Attachments:	125FW INRMP Annual Review 2022 (Signatory Page).pdf 2019Nov15_125FW_Jacksonville ANG Final INRMP.pdf

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Good Morning Mr. Grossman:

On 24Oct19, the Florida Fish and Wildlife Conservation Commission (FWC) signed the current version of the INRMP for the 125FW, Florida Air National Guard. That document was written and concurrence was given by all three parties (FWC, USFWS and 125FW FANG) as required by the Sikes Act. This e-mail is being sent to you as a courtesy reminder the Sikes Act also requires an annual review by all parties.

An Invasive Species Study was conducted on the installation in May 2022 and The Environmental Management Office is awaiting the contractor's final report, as well as the Invasive Species Management Plan. This project was outlined in the FY2021 Work Plan (pg. 51). We are currently pursuing the funding to conduct a tree inventory of the Jacksonville ANG site to obtain baseline information on the extent of forested areas and timber resources, and develop GIS layers reflecting inventory results for use in planning. This project is outlined in the FY2022 Work Plan (pg. 52).

Please review and let me know if you have any follow up comments to the 125FW, Florida Air National Guard INRMP as requested. If you do not have comments, please sign/date the Signatory Page (Attachment 3) and return to me at your earliest opportunity. If no response is received, I'll assume your agency is still in concurrence with the original document as written. If you would like to meet to discuss any questions or concerns we can schedule a time at your convenience.

Thank you in advance for your time and cooperation. If you have any questions, please contact me by phone, (904-741-7410), or email, ruthel.wynn.1@us.af.mil <mailto:ruthel.wynn.1@us.af.mil>.

Rudy

Mr. Ruthel (Rudy) E. Wynn, Jr. PMP, REM
Federal Environmental Manager
125FW - FL ANG
Comm (904) 741-7410
DSN 641-7410
ruthel.wynn.1@us.af.mil

2 Attachments:
1. Jacksonville ANG Final INRMP - Nov 2019
2. 125FW INRMP Annual Review 2022 (Signatory Page)

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2022

WYNN.RUTHEL.EARL.JR.1203326927 Digitally signed by WYNN.RUTHEL.EARL.JR.1203326927 Date: 2022.07.14 08:51:12 -04'00'

[ ] Date

Jacksonville ANGB

Digitally signed by CHRISTOPHER PUTNAM Date: 2022.08.29 13:23:05 -04'00'

[ ] Date

US Fish and Wildlife Service

[ ] Date

Florida Fish and Wildlife Conservation Commission

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2023

[ ]	Date
Jacksonville ANGB	
[ ]	Date
US Fish and Wildlife Service	
[ ]	Date
Florida Fish and Wildlife Conservation Commission	

ANNUAL REVIEW DOCUMENTS

This page is used to certify the annual review and coordination of the Jacksonville ANGB INRMP.

With the signature below, this document acknowledges that the annual review and coordination of the INRMP has occurred for the specified year.

Year: 2024

[ ]	Date
Jacksonville ANGB	
[ ]	Date
US Fish and Wildlife Service	
[ ]	Date
Florida Fish and Wildlife Conservation Commission	

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DOCUMENT CONTROL

Record of Review –In accordance with the Sikes Act, Department of Defense Instruction (DoDI) 4715.03, *Natural Resources Conservation Program*, Department of Defense Manual (DoDM) 4715.03, *INRMP Implementation Manual*, and Air Force Instruction (AFI) 32-7064, *Natural Resources Management*, an INRMP is required to be reviewed annually to ensure plans and projects remain current, and every 5 years for operation and effect. Annual reviews and updates are accomplished through annual meetings led by the base Environmental Manager (EM) and attended by the USFWS, the FWC, and, if required, the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA NMFS). During the annual meetings, actions taken over the previous year are discussed and actions to be taken over the coming year are discussed and agreed to. The meeting is followed up in writing for concurrence by the EM and the representatives from the USFWS and the FWC. As part of the annual and 5-year reviews, the EM shall hold meetings with internal stakeholders to ensure all personnel and tenants are informed of INRMP requirements.

ACRONYMS

°F	degrees Fahrenheit
125 FIG	125 Fighter Interceptor Group
125 FW	125 Fighter Wing
159 FS	159 Fighter Squadron
ac	acres
AFI	Air Force Instruction
AFPAM	Air Force Pamphlets
ANG	Air National Guard
ANGB	Air National Guard Base
AOA	Area of Action
BA	Biological Assessment
BASH	Bird/Wildlife Aircraft Strike Hazard
BCI	Bat Conservation International
BGEPA	Bald and Golden Eagle Protection Act
BHWG	Bird Hazard Working Group
BMP	Best Management Practice
CE	Civil Engineer
CECOS	Civil Engineer Corps Officers School
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEP	Department of Environmental Protection
DEPARC	Defense Environmental Programs Annual Report to Congress
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDM	Department of Defense Manual
DUSD	Deputy Under Secretary of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EM	Environmental Manager
EO	Executive Order
ERP	Environmental Resource Permit
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FDAC	Florida Department of Agriculture and Consumer Services
FEMA	Federal Emergency Management Agency
FWC	Florida Fish and Wildlife Conservation Commission
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FANG	Florida Air National Guard
FNAI	Florida Natural Areas Inventory
FY	Fiscal Year
GIS	Geographic Information Systems
GSU	Geographically Separate Unit
IFAW	International Fund for Animal Welfare
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan

IPM	Integrated Pest Management
IPMC	Integrated Pest Management Coordinator
JAA	Jacksonville Aviation Authority
JAX	Jacksonville International Airport
MBTA	Migratory Bird Treaty Act
MOA	Memorandums of Agreement
MOU	Memorandums of Understanding
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NCDC	National Climatic Data Center
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NMFS	National Marine Fisheries Service
NMFWA	National Military Fish and Wildlife Association
NOAA	National Oceanic and Atmospheric Administration
NR	Natural Resources
NRCS	Natural Resources Conservation Service
NWS	National Weather Service
OPR	Office of Primary Responsibility
ORV	Off-road Recreational Vehicle
P2	Pollinator Partnership
PIF	Partners in Flight
PL	Public Law
QD	Quantity Distance
SCS	Soil Conservation Service
SEADS	Southeast Air Defense Sector
SERCC	Southeast Regional Climate Center
SJWMD	St. John's Water Management District
SOW	Scope of Work
SWAP	State Wildlife Action Plan
SWPPP	Storm Water Pollution Prevention Plan
USACE	US Army Corps of Engineers
USAF	US Air Force
USC	US Code
USDA	US Department of Agriculture
USDA-WS	US Department of Agriculture – Wildlife Services
US EPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
WHMP	Wildlife Hazard Management Plan

1.0 EXECUTIVE SUMMARY

The Sikes Act Improvement Act of 1997, 16 USC § 670a et seq., as amended, (herein referred to as the Sikes Act) requires federal military installations with significant natural resources to develop a long-range INRMP and implement cooperative agreements with other agencies. The Sikes Act is implemented through Department of Defense (DoD) and US Air Force (USAF) Instructions and Manuals. The conservation measures discussed in the INRMP help manage water resources, reduce bird/wildlife aircraft strike hazard (BASH) risk, manage federal and state-listed species, and sustain natural resources. The Jacksonville ANGB INRMP is intended to be in support of and consistent with the intent of the Sikes Act.

The Jacksonville ANGB INRMP is the primary guidance document and tool of the FANG for managing natural resources on the installation. Jacksonville ANGB is composed of approximately 342 acres (ac) in Duval County, Florida. The land is leased from the Jacksonville Aviation Authority (JAA) and is entirely contained within the Jacksonville International Airport (JAX) boundary. All facilities on Jacksonville ANGB are under the command of the FANG with the primary purpose of providing air defense for the southeastern United States, as directed by the North American Aerospace Defense Command and United States Northern Command, and providing assistance of the State of Florida for use during local and state-wide disasters or emergencies. Jacksonville ANGB, due to its geographic location and the nature of the facility, contains limited, but important habitat and species that require active natural resource management. The natural resources management on Jacksonville ANGB must be conducted in a way that provides for sustainable land use, complies with applicable environmental laws and regulations, real estate leases and licenses, and provides for no net loss in the capability to support the military mission. This INRMP provides a structure and plan to manage natural resources more effectively and ensure that Jacksonville ANGB facilities and lands remain available to support the FANG military mission into the future.

Specific goals in the Jacksonville ANGB INRMP are supported by its objectives and work plans, as well as management strategies and specific actions. Goals and objectives are listed in **Section 8**, and projects are summarized in **Section 9**. The Jacksonville ANGB INRMP provides a description of the installation, the military mission, the environment on the installation, and specific plans and strategies for natural resource management designed for sustainable military operations. The implementation of the Jacksonville ANGB INRMP will ensure the successful accomplishment of the military mission while promoting adaptive management that sustains ecosystem and biological integrity, and provides for multiple uses of natural resources.

2.0 GENERAL INFORMATION

2.1 Purpose and Scope

This INRMP is the primary guidance document and tool for natural resource management at Jacksonville ANGB that provides for sustainable, healthy ecosystems, complies with applicable environmental laws and regulations, real estate leases and licenses, and provides for “no net loss” in the capability of installation lands to support the military mission. The Installation Commander

can use this INRMP to manage natural resources more effectively to ensure that installation lands remain available and in good condition to support the installation's military mission over the long term.

The Jacksonville ANGB INRMP is consistent with the Sikes Act as required by the DoD, USAF, and the National Guard Bureau (NGB). It was developed as a result of the presence of federal and state-listed species, and the presence of Waters of the United States including wetlands. A multiple-use approach is implemented to allow for the presence of mission-oriented activities, as well as protecting environmental quality through the efficient management of natural resources.

2.2 Management Philosophy

2.2.1 Ecosystem Management

Natural resources at Jacksonville ANGB are managed with an ecosystem management approach as directed by AFI 32-7064 and DoDI 4715.03. Ecosystem management is defined as management to conserve major ecological services and restore natural resources while meeting the socioeconomic, political, and cultural needs of current and future generations. The goal of ecosystem management on military lands is to ensure that military lands support present and future test and training requirements while conserving, improving, and enhancing ecosystem integrity. The ecosystem management program for Jacksonville ANGB incorporates these elements as described in **Table 1**.

Biodiversity is the degree of variation of life within a given ecosystem, region, or even the entire planet. The DoD's challenge is to manage for biodiversity in a way that supports the military mission. Specific management practices identified in the Jacksonville ANGB INRMP have been developed to enhance and maintain biological diversity within the installation's ecosystems. Ecosystem management includes biodiversity conservation and invasive species control as integral parts of ecosystem management. Air National Guard (ANG) installations maintain or reestablish viable populations of all native species when practical and consistent with the military mission. ANG installations also identify the presence of exotic and invasive species, and implement programs to control and/or eradicate those species. Finally, when feasible, ANG installations develop joint control strategies with other federal, state, and local cooperating agencies and adjacent landowners to increase the effectiveness of control measures and for the benefits illustrated in **Figure 1**.

Table 1. Elements and Principles of Ecosystem Management	
DoDI 4715.03 Elements	
1	Avoid single-species management and implement an ecosystem-based multiple species management approach, insofar as that is consistent with the requirements of the Endangered Species Act (ESA)
2	Use an adaptive management approach to manage natural resources such as climate change
3	Evaluate and engage in the formation of local or regional partnerships that benefit the goals and objectives of the INRMP
4	Use the best available scientific information in decision-making and adaptive management techniques in natural resource management
5	Foster long-term sustainability of ecosystem services
AFI 32-7064 Principles	
1	Maintain or restore native ecosystem types across their natural range
2	Maintain or restore ecological processes such as wildland fire and other disturbance regimes where practical and consistent with the military mission
3	Maintain or restore the hydrological processes in streams, floodplains, and wetlands when feasible
4	Use regional approaches to implement ecosystem management on an installation by collaboration with other DoD components as well as other federal, state and local agencies, and adjoining property owners
5	Provide for outdoor recreation, agricultural production, harvesting of forest products, and other practical utilization of the land and its resources, provided that such use does not inflict long-term ecosystem damage or negatively impact the ANG mission

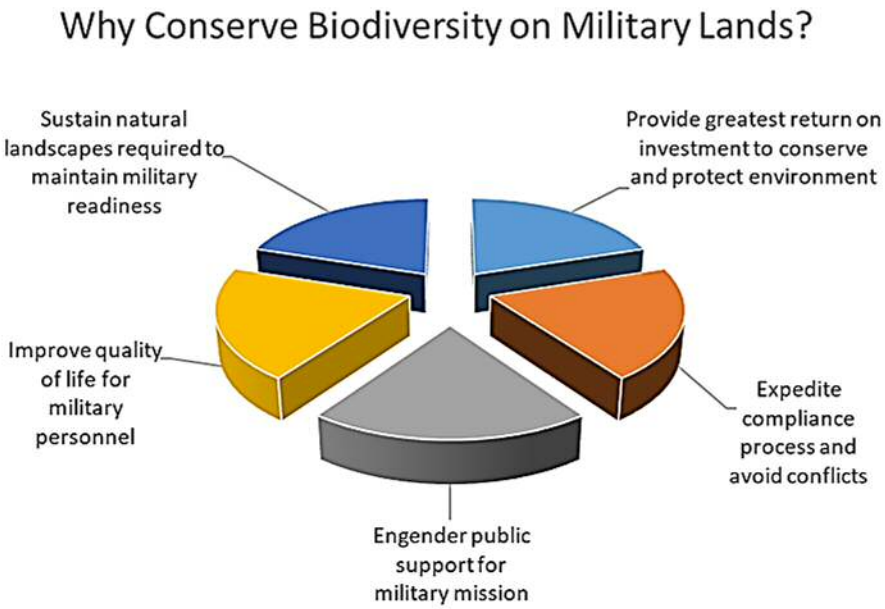


Figure 1. Why conserve biodiversity on Military Lands
**Adapted from Keystone Center, 1996.*

2.3 Authority

2.3.1 Natural Resources Law, Regulations & Policy

The ANG, USFWS, and FWC determined an INRMP was required for Jacksonville ANGB due to the presence of significant natural resources thereby necessitating conservation and management.

DoDI 4715.03, *Natural Resources Conservation Program*, identifies the DoD policies and procedures concerning natural resources management and INRMP reviews, public comment, and endangered species consultation. INRMPs are required to be jointly reviewed by the USFWS, state fish and wildlife agency, and ANG installation for operation and effect on a regular basis, but not less often than every 5 years. Minor updates and continued implementation of an existing INRMP do not require need for public comment. Major revisions to an INRMP require an opportunity for public review. The degree of endangered species consultation when updating or revising an INRMP depends upon specific projects identified in the INRMP and the amount of past consultation. Most updates and revisions will not require formal consultation. ESA Section 7 consultation is required for INRMPs that contain projects that may affect federally-listed species or designated critical habitat. The need for such consultation should become apparent during the review for operation and effect, and implemented if necessary as part of an INRMP revision.

2.3.2 National Environmental Policy Act Compliance

The Environmental Impact Analysis Process (EIAP) is the process by which federal agencies facilitate compliance with environmental regulations. The primary legislation affecting these agencies' decision-making process is the National Environmental Policy Act of 1969 (NEPA; 42 USC § 4321 *et seq.*). NEPA requires that any organization using federal monies, proposing work on federal lands, or requiring a federal permit consider potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed decisions.

The Council on Environmental Quality (CEQ) was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. The adoption of an INRMP can be considered a major federal action as defined by Section 1508.18 of the CEQ regulations. This requires an analysis of potential environmental impacts for the implementation of an INRMP, although a complete Environmental Assessment (EA) is not necessarily required as individual actions and projects undergo their own NEPA analysis.

CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process, Jacksonville ANGB notifies relevant federal, state, and local agencies and allows them sufficient time to make known their environmental concerns specific to a Proposed Action. Comments and concerns submitted by these agencies during the IICEP process are subsequently incorporated into the analysis of potential environmental impacts. This coordination fulfills requirements under Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, and AFI 32-7061, *Environmental Impact Analysis Process*. Furthermore, public participation in decision making on new proposals is required. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. Agencies, organizations, and members of the public with a potential

interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate.

The EIAP for the implementation of Jacksonville ANGB's first INRMP (July 2014) was conducted in accordance with NEPA, CEQ *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] § 1500-1508), and 32 CFR Part 989. The EIAP and decision-making process for the Proposed Action (implementation of the previous 2014 Jacksonville ANGB INRMP) involved an examination of all environmental issues pertinent to the action proposed. Impact evaluations of the previous 2014 Jacksonville ANGB INRMP determined that no significant environmental impacts would result from implementation of the Proposed Action or any identified alternative. This determination was based on thorough review and analysis of existing resource information, and coordination with knowledgeable, responsible personnel from the Jacksonville ANGB and other relevant local, state, and federal agencies. The EIAP for the implementation of the previous 2014 Jacksonville ANGB INRMP does not include an analysis of effects for individual actions or projects. Individual actions or projects that have the potential to impact the environment will be analyzed separately in accordance with the NEPA process. A new EIAP is not required for this INRMP update.

2.3.3 Responsibilities

The updated Jacksonville ANGB INRMP has been organized to ensure the implementation of year-round, cost-effective management projects that meet the requirements of the installation. Various personnel and organizations within the ANG are responsible for the implementation of this INRMP are described in the following subsections.

2.3.3.1 Installation Commander

The Installation Commander oversees the installation and is responsible for ensuring the goals and objectives of the INRMP are implemented to the fullest extent practicable based on funding and manpower availability. The Installation Commander is the official signatory for the Jacksonville ANGB INRMP.

2.3.3.2 Base Civil Engineer

The Base Civil Engineer (CE) plans, budgets, approves, and oversees all maintenance and construction activities performed on the installation. All maintenance and construction-related projects or management activities proposed in this INRMP should be approved by the Base CE to ensure that funding is available and these projects are complementary to the installation's comprehensive planning processes.

2.3.3.3 ANG NGB/A4AM Natural Resources Program Manager

The ANG NGB/A4AM Natural Resources Program Manager (ANG NR Program Manager) is the technical point-of-contact on all natural resource related activities for the ANG. The ANG NR Program Manager tracks DoD and USAF policies and approves funding for projects identified as a priority in the Jacksonville ANGB INRMP. The development of projects included in the INRMP and any deviations from those projects will be submitted to the ANG NR Program Manager for review. Decisions resulting from those reviews will be a cooperative effort between the ANG NR Program Manager and the EM and/or the installation's Natural Resources Manager, when applicable.

2.3.3.4 Environmental Manager

The EM plans, budgets, approves, and oversees all environmental activities performed on the installation and is responsible for ensuring that activities associated with the implementation of this INRMP adhere to applicable federal, state, local, and USAF environmental regulations and guidelines. Projects proposed in the Jacksonville ANGB INRMP are reviewed by the EM and the ANG NR Program Manager. The EM should independently review deviation from the projects proposed in this INRMP. Persons responsible for implementation of the INRMP are required to attend the Civil Engineer Corps Officers School (CECOS) DoD Natural Resources Compliance course (http://www.netc.navy.mil/centers/csfe/cecos/CourseDetail2.htm#tab25).

2.3.3.5 Pest Management Coordinator

The Installation Pest Management Coordinator (IPMC) is responsible for the protection of real estate, control of potential disease vectors or animals of other medical importance, control of undesirable or nuisance plants and animals (including insects), and prevention of damage to natural resources. Pest management personnel utilize Integrated Pest Management (IPM) approaches and are responsible for the implementation of the IPM Plan. The IPMC is also responsible for coordinating with US Department of Agriculture – Wildlife Services (USDA-WS) for all depredation activities, regarding required permitting, and for permit clarification, when required, while keeping the INRMP Working Group appraised of proposed modifications or changes to permits as they occur or are proposed.

2.3.3.6 Flight Safety Office

The Jacksonville ANGB Flight Safety Office is responsible for development, implementation, and management of the Jacksonville ANGB BASH Program. The Flight Safety Office also ensures that bird/wildlife strikes resulting from aircraft assigned to transient units at Jacksonville ANGB are accurately documented and reported to the EM and the USAF BASH Team. In addition, the Flight Safety Office participates in the Jacksonville ANGB Bird Hazard Working Group (BHWG) which conducts meetings to evaluate and refine strategies for the reduction of BASH risk on Jacksonville ANGB. The Flight Safety Office is responsible for coordinating with and providing required information on BASH activities with the EM.

2.3.3.7 Wing Safety Office

The Wing Safety Office is responsible for implementing all activities presented in this INRMP that pertain to the BASH Reduction Program. The Wing Safety Office also ensures that bird/wildlife strikes that occur with aircraft assigned to units at Jacksonville ANGB are accurately documented and reported to the USAF BASH Team. In addition, the Wing Safety Office ensures that the BHWG conducts meetings on the reduction of the BASH threat on the installation.

2.3.3.8 Airfield Management

Airfield Management is responsible for ensuring that the airfield is acceptable and appropriated for flight activity.

2.3.3.9 US Department of Agriculture – Wildlife Services

The USDA-WS is responsible for monitoring hazardous wildlife that have the potential to create an aircraft strike hazard. USDA-WS personnel support activities that pertain to the BASH Program and are responsible for wildlife depredation requirements within the airfield, as well as

dispersal/harassment, capture and translocation, trapping and removal, surveillance and monitoring, and depredation permit acquisition.

2.3.3.10 Operations and Maintenance

Operations and Maintenance personnel are responsible for all grounds maintenance activities on the installation. In addition, this office will ensure completion of the habitat management protocols established in this INRMP taking into account mission requirements, natural resource management goals, and regulatory compliance requirements. The Operations and Maintenance personnel will also periodically review grounds maintenance equipment to determine if new or additional equipment is needed for the proper maintenance of the installation's landscapes.

2.3.3.11 Legal Office

The Legal Office is responsible for ensuring the implementation of the management objectives contained within the Jacksonville ANGB INRMP meet all regulatory and statutory requirements that pertain to natural resources management. The Legal Office will review any future natural resources management proposals and alert the Installation Commander and EM should there be any regulatory conflicts or shortfalls. In addition, the Legal Office will keep participating INRMP parties informed of any new statutes or regulations that might affect natural resources management.

2.3.3.12 Public Affairs Office

The Public Affairs Office is responsible for the coordination of public access for events at Jacksonville ANGB. The Public Affairs Office serves as the point of contact to interface between the Installation Commander and civilian groups interested in the installations for environmental, educational, or other purposes.

2.3.3.13 US Fish and Wildlife Service

The USFWS is a signatory of the INRMP and provides input regarding natural resource projects and operational component plans. The USFWS, when feasible, will support ANG wildlife and vegetation surveys conducted at the Jacksonville ANGB.

2.3.3.14 Florida Fish and Wildlife Conservation Commission

The FWC is a signatory of the INRMP. They provide input regarding natural resource projects and operational component plans, along with updated imperiled species lists online. The FWC, when feasible, will support ANG wildlife and vegetation surveys conducted at the Jacksonville ANGB.

2.4 Integration with Other Plans

By its nature, an INRMP is multidisciplinary and provides the summary for natural resources at a specific installation. As a result, information from an INRMP is incorporated into other plans and other plans are written to support the INRMP. The Jacksonville ANGB INRMP is integrated with a number of plans including the following:

- BASH Management Plan – provides summary of the BASH program on Jacksonville ANGB, including techniques, processes, responsibilities, and management recommendations (FANG 2016).

- Integrated Pest Management Plan (IPM Plan) – plan for management of pest species, including nuisance wildlife and invasive species, to minimize impact to mission, natural resources, and the environment (FANG 2014).
- Wildlife Hazard Management Plan (WHMP) – plan which identifies specific wildlife hazards and mitigation measures to be used on the airport (JAX 2015)
- Stormwater Pollution Prevention Plan (SWPPP) – plan for management of stormwater and water-borne pollution (JAX 2016).
- Hazardous Waste Management Plan (HWMP) – Guidance on the proper management of hazardous waste produced at the installation (FANG 2018).
- Integrated Solid Waste Management Plan (ISWMP) – Plan for improving the management of solid waste through source reduction and green procurement (FANG 2017).
- Forest Management Plan (FMP) – plan for proper management and conservation of timber resources at JAX (JAX 2017).

In addition, this INRMP is also integrated with the following outside agency plan.

- Florida State Wildlife Action Plan (SWAP) – provides information on the abundance and distribution of wildlife throughout the state, descriptions of key habitats for select species, descriptions of problems which may adversely affect species, description of conservation actions, and descriptions of proposed monitoring plans (FWC 2012). Florida's SWAP has been revised and was submitted to the USFWS for approval in October 2018. Once approved, the updated plan will be available at: https://myfwc.com/conservation/special-initiatives/fwli/action-plan/.

3.0 INSTALLATION OVERVIEW

3.1 Location and Area

Jacksonville ANGB is located at JAX, approximately 10 miles north of downtown Jacksonville in Duval County, Florida (**Figures 2** and **3**). The installation occupies 342 ac of land leased from the JAA and is entirely contained within the airport boundary in the southwestern section of the runway complex. Jacksonville ANGB is a co-user of the airport's Federal Aviation Administration (FAA) tower and 2 runways (**Figure 4**).

Jacksonville ANGB also has 5 Geographically Separate Units (GSUs) including: MacDill Air Force Base in Tampa, Florida; Camp Blanding Joint Training Center in Starke, Florida; Cape Canaveral Air Force Station in Cocoa Beach, Florida; Tyndall Air Force base in Panama City, Florida; and Homestead Air Reserve Base in Homestead, Florida. Based on tenant agreements for these GSUs, natural resource management falls under the host INRMP so any issues are coordinated with the host.

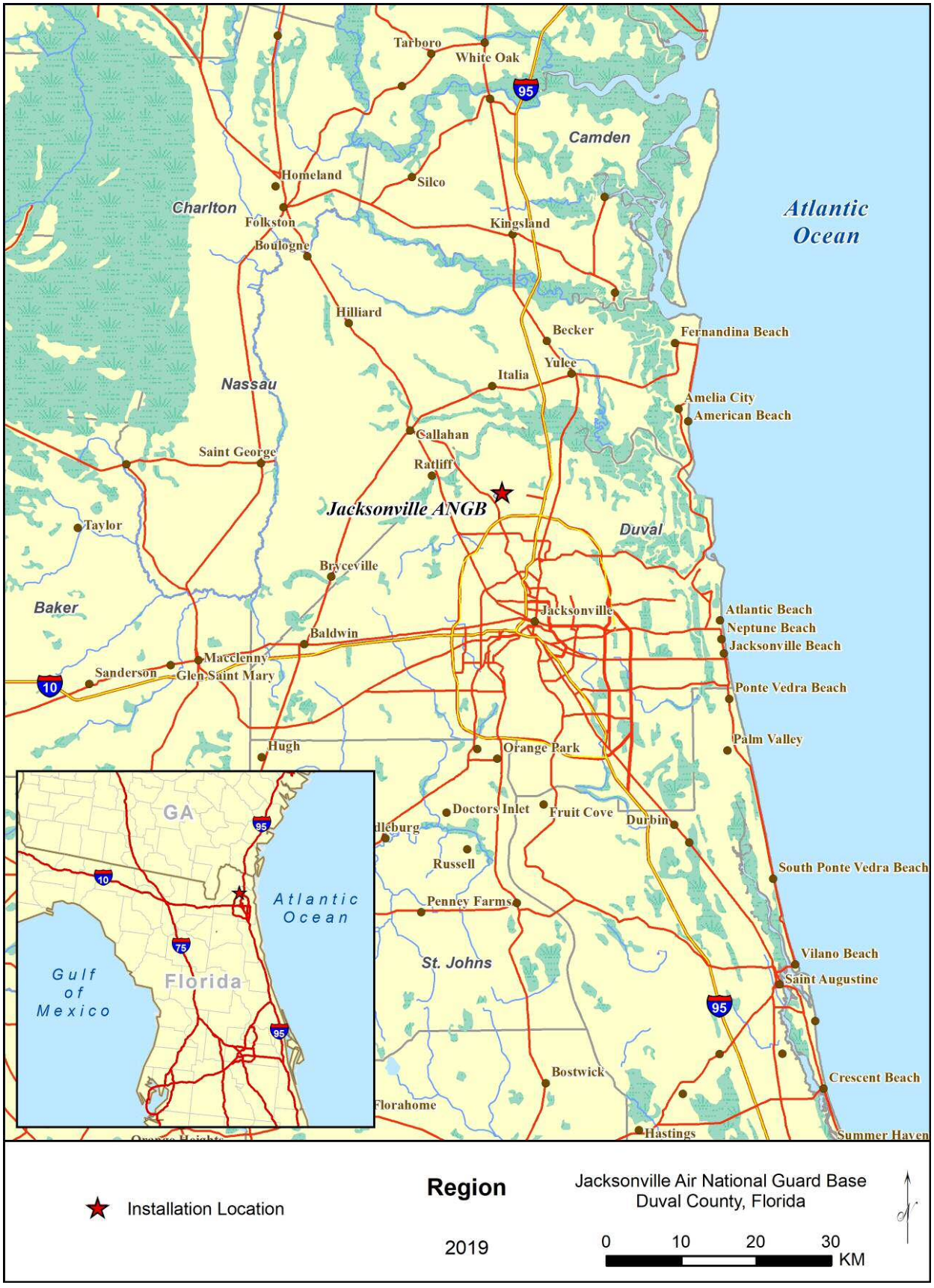


Figure 2. Jacksonville ANGB Regional Map

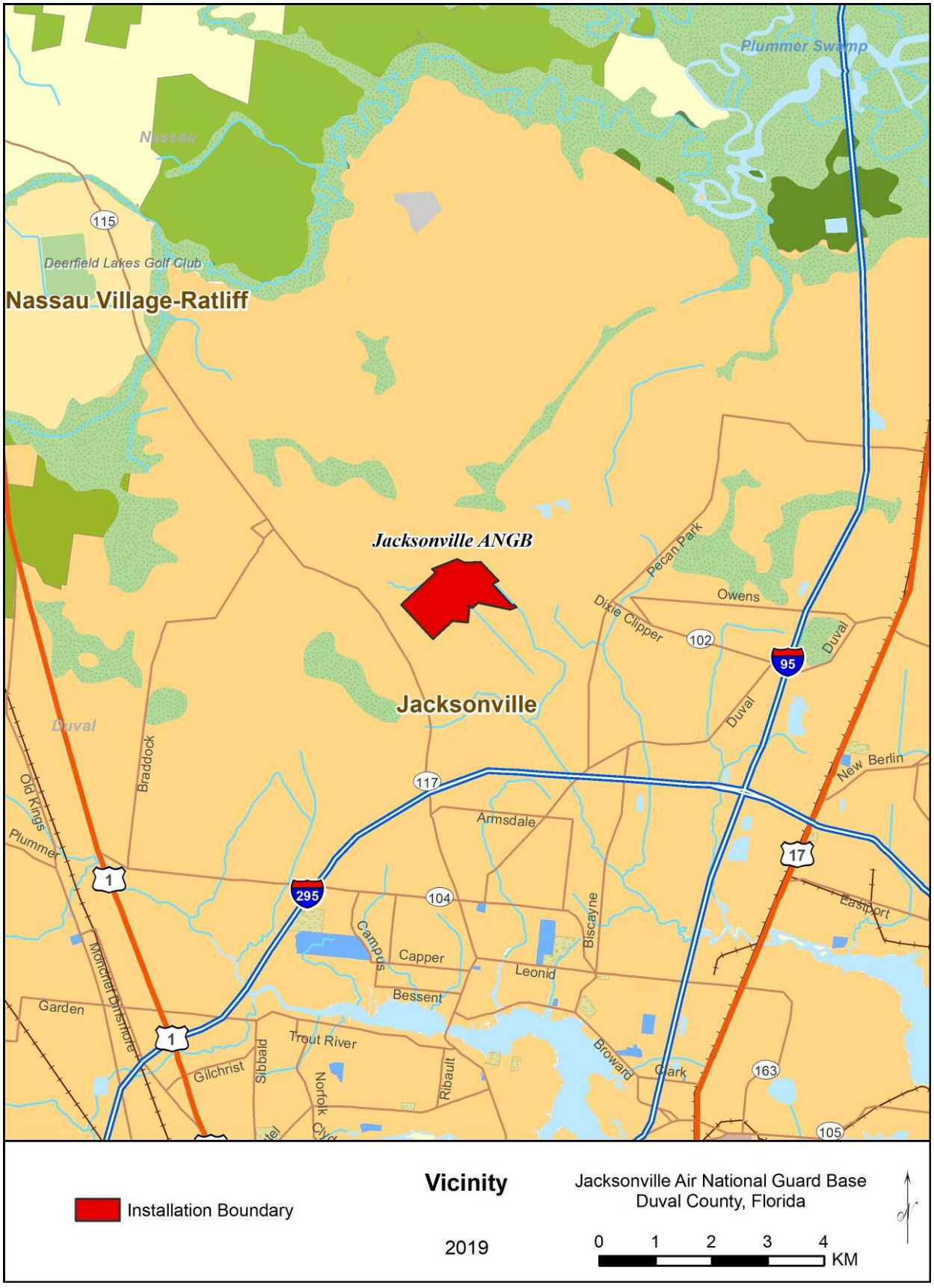


Figure 3. Jacksonville ANGB Vicinity Map

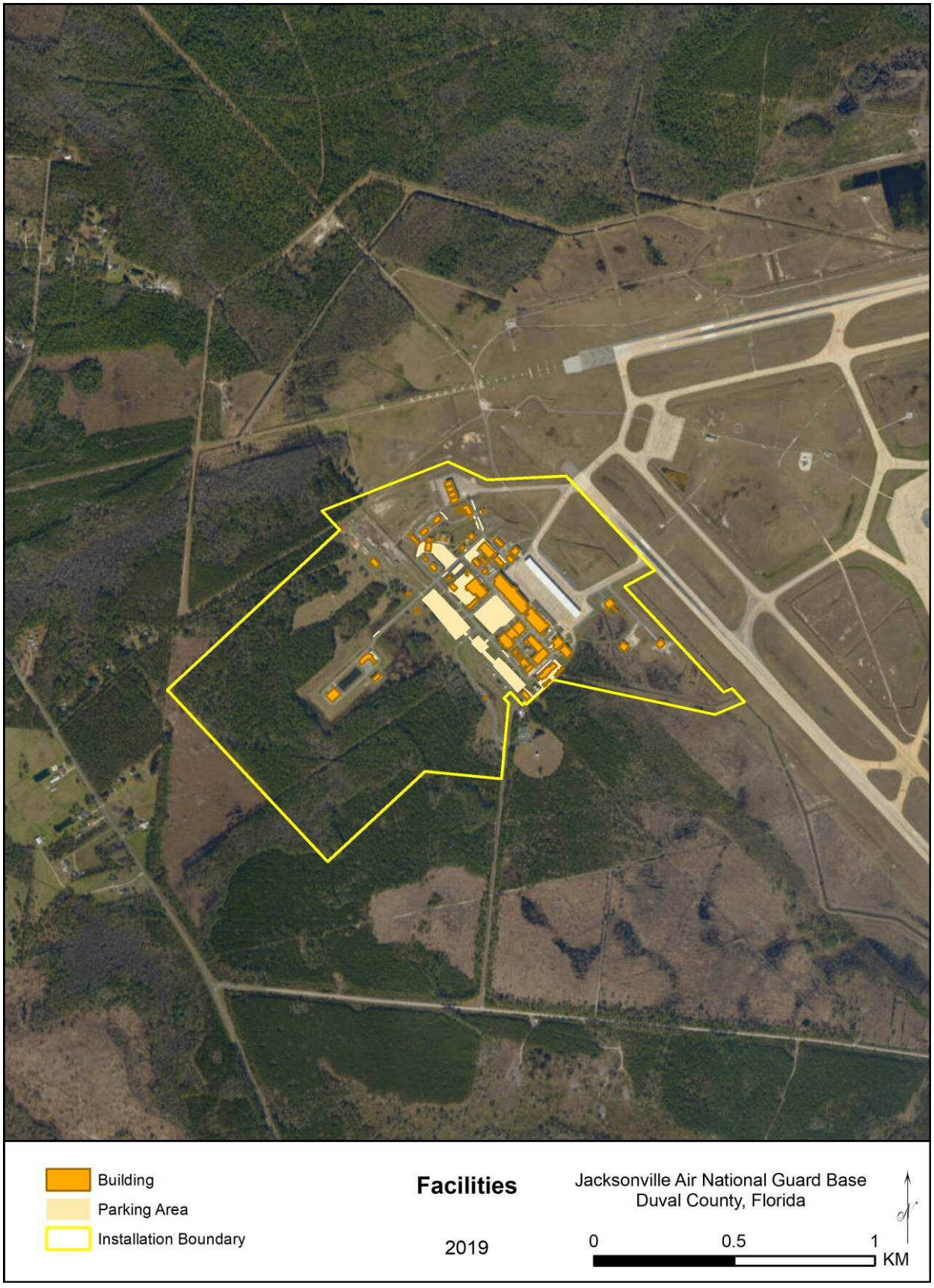


Figure 4. Jacksonville ANGB Facilities Map

3.2 Installation History

The Jacksonville Municipal Airport was constructed in 1926 as a small modern airport facility to address the rapidly increasing airmail and passenger traffic in the region. Following World War II, Jacksonville Municipal Airport was renamed Thomas Cole Imeson Airport after the airport's most vocal supporter who secured funding for runway, terminal, and hangar expansions and improvements. However, despite these improvements, the airport's short runways could not accommodate the larger jets that started to become more popular and frequently used. Between 1965 and 1968, a new airport, JAX was built and continues to operate and expand at its present day location (ANG 2010).

The FANG was established in December 1946 with the activation of the 159 Fighter Squadron (159 FS), which operated out of the facilities at the Thomas Cole Imeson Airport. The 159 FS became part of the 116 Fighter Group which was responsible for defending Japan from air attack. In 1952, the unit returned from Korea and was re-designated as the 159 Fighter Bomber Squadron, which was moved to new facilities at the Thomas Cole Imeson Airport. Frequent changes in funding levels, mission assignments, and aircraft changes would pose a major challenge in the operation and management of the unit. In July 1955, the unit's mission was changed to air defense and the unit was re-designated as the 159 Fighter Interceptor Squadron. One year later the unit was again re-designated as the 125 Fighter Bomber Group and gained a runway alert mission. The alert program shaped the mission of the FLANG for the next several decades, and for this reason the FANG received the most modern aircraft available. In the 1960's the unit upgraded to new aircraft designed to carry out an air defense mission and was equipped to integrate with the sprawling ground-based Air Defense Radar System. The unit continued to upgrade and expand its facilities at the Thomas Cole Imeson Airport, but soon began to run out of room. In 1968, the unit moved to a state of the art facility at the newly opened JAX. The facility was located on 157.6 ac of property at JAX and was the first ANG facility to be designed and constructed in its entirety from the ground up specifically for ANG use. The base consisted of a main cantonment area, a removed ammunition storage area, a secure alert area with a separate alert runway, 4 hangars, crew quarters, and a security building. For the remainder of the 1960s and throughout the 1970s, the unit and base continued to carry out the air defense mission (ANG 2010).

In 1972, the unit was re-designated as the 125 Fighter Interceptor Group (125 FIG) and assumed responsibility for air defense for all Gulf Coast states. As a result, a permanent detachment with 40 full-time personnel and associated aircraft were established in New Orleans, Louisiana. In 1974 and 1975, the 125 FIG received the newest all weather fighter interceptor and received extensive training and equipment. As a result, new facilities, including a jet engine inspection and maintenance shop, warehouse supply and equipment building, and electrical switch and substation were constructed at Jacksonville ANGB. From 1977-1979, the 125 FIG earned the USAF Outstanding Unit Award. In April 1987, the unit was the first to receive the F-16 Fighting Falcon and a number of new buildings were constructed in order to accommodate the fleet of new jets. In October 1993, Jacksonville ANGB's alert mission, which had begun in 1957, was ceased. In 1995, the unit was re-designated as the 125 FW and received the F-15 Eagle, the unit's current aircraft. This marked the first time any unit transitioned from one fourth generation fighter to another, an acknowledgement of the unit's relative importance to US air defense. The 125 FW took over the mission of the Southeast Air Defense Sector (SEADS) which had patrolled the skies along 3,000 miles of coastline from North Carolina to Texas. Also during this time, the 125 FW

had various deployments around the world to participate in training exercise as well as standing missions. In September 2001, the unit secured the skies of the SEADS area. In 2003, the unit also supported Operation Iraqi Freedom with pilots, security forces, communication specialists, engineers, and others (ANG 2010).

3.3 Military Missions

The ANG mission is two-fold with federal and state components. The federal mission is to maintain well-trained, well-equipped units available for prompt mobilization during war and to provide assistance during national emergencies (e.g. natural disasters or civil disturbances). During peacetime, combat-ready units and support units are assigned to USAF major commands to carry out missions compatible with training, mobilization readiness, humanitarian, and contingency operations. When units are not mobilized, they report to the Governor of their respective state. The state mission is to provide protection of life, property, and preserve peace, order, and public safety.

The 125 FW's mission is to provide air defense for the southeastern United States, as directed by the North American Aerospace Defense Command and United States Northern Command, from Charleston, South Carolina to the southern tip of Florida and across the Florida panhandle. The 125 FW maintains their F-15 Eagle fighters on continuous 24-hour alert status at Homestead Air Reserve Base and at JAX. The 125 FW provides fire and BASH support for the unit's flying operations as well as for the JAX operations. The 125 FW also has a state mission which is to provide trained and equipped personnel to protect life and property and to preserve peace, order, and public safety.

3.4 Surrounding Communities

Duval County lands are a broad mix of agricultural, residential, commercial, industrial, and government/civic lands. Large sections of the northern and western sections of the county are made up of natural area lands included in the Florida Natural Areas Inventory. Industrial and port facilities occupy land surrounding the downstream portion of the St. Johns River, while land bordering the southern end of the river consists of residential areas. Although urban sprawl is a continuing trend within Duval County, the proportion of open space to development remains relatively high. The county has vast swampy areas but most of the open space consists of pine flatwoods. The coastal beaches and multiple river inlets provide popular areas for recreation and water sports (FANG 2005).

Land use adjacent to the JAX includes agricultural areas to the north and west; low density residential and light industrial areas to the south; and a business park, light industrial, and community/general commercial areas to the east (FANG 2005).

3.5 Local and Regional Natural Areas

Jacksonville ANGB is located near several parks and preserves including Pumpkin Hill Creek Preserve, Thomas Creek Wildlife Management Area, Four Creeks State Forest, and Seaton Creek Historic Preserve.

4.0 PHYSICAL ENVIRONMENT

4.1 Climate

The state of Florida is characterized by a humid subtropical climate (National Climatic Data Center [NCDC] 2011). Between 1981 and 2010, the warmest month was July with an average maximum temperature of 92.0 degrees Fahrenheit (°F). During this same period, the month of January was the coldest with an average minimum temperature of 41.4°F (National Weather Service [NWS] 2019). Occasionally large cold fronts reach Northern Florida during the winter and bring freezing temperatures; however snowfall is uncommon (NCDC 2011). The annual precipitation is approximately 52.4 inches (NWS 2018), and is generally heaviest in the summer months (June-September; Southeast Regional Climate Center [SERCC] 2010). Although Florida is heavily impacted by Atlantic hurricanes, Jacksonville has only been hit directly by a hurricane once in the last century, Hurricane Dora in 1964 (NCDC 2011).

4.2 Landforms

The topography of Jacksonville, Florida results from the formation of marine terraces during the Pleistocene glaciation. As the sea floor level decreased, these marine terraces became exposed and have been eroded so that only some remnants of the original terraces remain in the county. The topography of Duval County is mostly low and flat with some relief provided by the remnants of these marine terraces. The elevation in Duval County ranges from sea level to approximately 190 feet above mean sea level (msl) (Soil Conservation Service [SCS] 1978). Within the installation, the topography is mostly level at an elevation of approximately 20 feet above msl (FLANG 2005; **Figure 5**).

4.3 Geology and Soils

Jacksonville, Florida consists of a thick arrangement of various unconsolidated sedimentary layers overlying a bedrock layer. The bedrock layer is composed of Wissahickon schist and gneiss. The sedimentary layers gently dip toward the southeast and thicken on the edge of the continental margin.

The US Department of Agriculture (USDA) Soil Conservation Service mapped and classified Jacksonville's soils in the 1970s (SCS 1978). The major soil types present at Jacksonville ANGB include the Sapelo, Yulee, and Mascotte series. Nearly 50% of the installation consists of Sapelo fine sand (Natural Resources Conservation Service [NRCS] 2011; **Figure 6**).

4.4 Hydrology

The main waterbodies that drain the Jacksonville area are the St. Johns River, Nassau River, and their tributaries. These rivers ultimately drain to the Atlantic Ocean. Several tidal tributaries of the St. Johns River are found south of the Jacksonville ANGB and JAX: the Trout River, Ribault River, and Broward River. Surface waters on the airport and the Jacksonville ANGB consists of several retention ponds, canals, ditches, and creeks (Cedar Creek and Little Cedar Creek). Runoff from the installation flows to Cedar Creek, and much of the storm water from the area is retained in retention ponds and swales.

The aquifers under Duval County include a deeper aquifer comprised of porous limestone within the Oldsmar Formation. This is the principal aquifer underlying the Jacksonville ANGB and is part of the Floridan aquifer system. This aquifer is composed of a sequence of limestone and dolomite. The recharge of this aquifer occurs in areas outside of the county, and the water quality of the aquifer ranges from good to poor, with a reduced water quality along the St. Johns River and coastal areas. There is a shallower aquifer under the county that generally consists of limestone, shale, and sand, with a confining clay layer. Recharge of this shallower aquifer occurs from rainfall recharge, and discharge occurs through seepage and well-discharge (FANG 2011).

Retention pond near munitions building
Photo by A. Montalvo

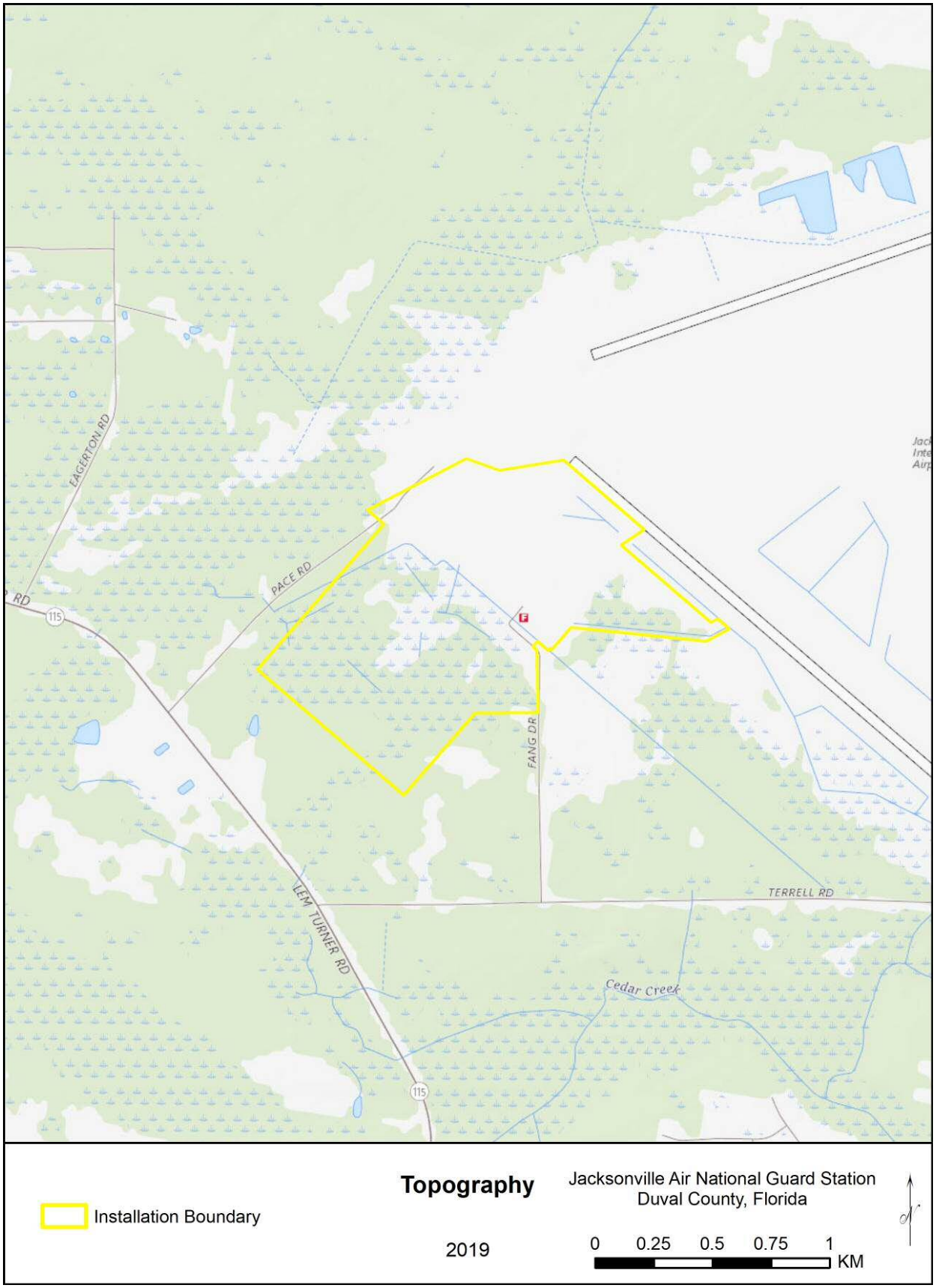


Figure 5. Jacksonville ANGB Topography Map

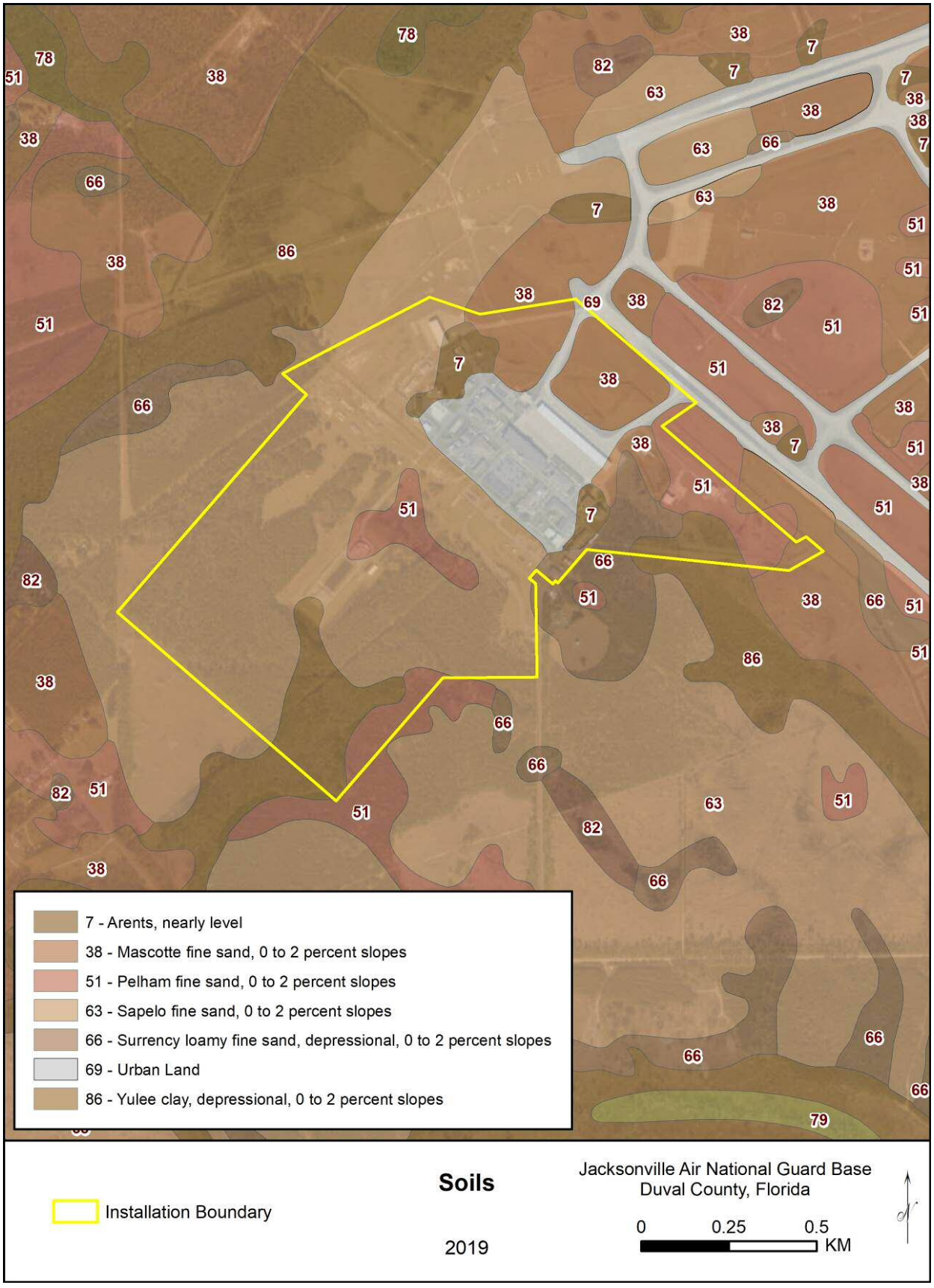


Figure 6. Jacksonville ANGB Soils Map

Figure 7. Jacksonville ANGB Water Resources Map

5.0 ECOSYSTEMS AND THE BIOTIC ENVIRONMENT

5.1 Ecosystem Classification

Jacksonville ANGB is located in the Sea Island Flatwoods ecoregion which is characterized by poorly-drained flat plains with low elevations, terraces and shoreline deposits, and wet soils. Loblolly and slash pine plantations cover much of the region.

5.2 Vegetation

5.2.1 Historic Vegetative Cover

The predominant vegetative communities near Jacksonville, Florida include the North Florida Flatwoods and Swamp Hardwood communities. The dominant plant species within the North Florida Flatwoods community comprise slash pine (*Pinus elliottii*), live oak (*Quercus virginiana*), sand live oak (*Quercus geminata*), saw palmetto (*Serenoa repens*), and inkberry (*Ilex glabra*). Dominant grass species within this community include chalky bluestem (*Andropogon virginicus* var. *glaucus*), broomsedge bluestem (*Andropogon virginicus*), lopsided indiangrass (*Sorghastrum secundum*), low panicum species (*Dicanthelium* spp.), and wiregrass (*Arisaema stricta*; FANG 2011). The Swamp Hardwoods community is generally dominated by blackgum (*Nyssa sylvatica*), red maple (*Acer rubrum*), fetterbush (*Lyonia lucida*), Virginia willow (*Itea virginica*), buttonbush (*Cephalanthus occidentalis*), and wax myrtle (*Myrica cerifera*; FANG 2011).

5.2.2 Current Vegetative Cover

A vegetation survey was completed for Jacksonville ANGB in 2015 to document the presence and extent of the vegetative communities and other land characteristics (FANG 2015a). All vascular plant species found at Jacksonville ANGB are listed in **Table 2**. The survey also characterized vegetation on Jacksonville ANGB into 7 natural vegetation communities (84 ac), 4 semi-natural vegetation communities (55 ac), and 9 developed vegetation communities (203 ac). Those vegetation communities, identified using the Standardized National Vegetation Classification System, are listed below along with their acreage on the installation (FANG 2015a):

<u>Natural Communities</u>:

- Forest and Woodland
  - Loblolly pine – Darlington oak woodland (22 ac)
  - Loblolly pine – sweetgum – Swamp tupelo successional swamp forest (50 ac)
  - Sandhills swamp tupelo – Pine streamhead swamp (<1 ac)
  - Pond – Cypress depression forest (3 ac)
- Shrubland and Grassland
  - Peelbark St. John's-Wort (*Hypericum* spp.) pond (4 ac)
  - Coastal plain limesink pond (Threadleaf beaksedge type; <1 ac)
  - Coastal plain beaksedge depression (5 ac)

<u>Semi-Natural Communities</u>:

- Early- to mid-successional loblolly pine forest (20 ac)
- Sweetgum – (water oak, willow oak) – loblolly pine/Elliott's blueberry – wax-myrtle ruderal forest (1 ac)

- Successional loblolly pine – Oak forest (33 ac)
- Tallowtree seasonally flooded forest (<1 ac)

Developed Vegetation:

- Slash pine plantation (24 ac)
- Lawn, garden, and recreational vegetation (105 ac)
- Other developed vegetation (5 ac)
- Developed wetland vegetation (3 ac)
- Open water (2 ac)
- Bare ground (3 ac)
- Impervious surfaces (62 ac)

Table 2. Vascular Plant Species at Jacksonville ANGB

Scientific Name	Common Name	Scientific Name	Common Name
Acer rubrum	Red maple	*Nyssa aquatica*	Water tupelo
Agalinis linifolia	Flaxleaf false foxglove	*Nyssa biflora*	Swamp tupelo
Albizia julibrissin	Silktree/mimosa tree	*Nyssa sylvatica*	Black tupelo
Aletris sp.	Colicroot	*Osmunda cinnamomea*	Cinnamon fern
Allium vineale	Wild garlic	*Osmunda regalis*	Royal fern
Amphacarpum mulenbergianum	Little blue maidencane	*Panicum anceps*	Beaked panicgrass
Andricus quercusfoliatus	Leafy oak gall wasp	*Panicum commutatum*	Variable witchgrass
Andropogon glomeratus	Bushy bluestem	*Panicum hemitomon*	Maidencane
Andropogon sp.	Bluestem	*Panicum repens*	Torpedo grass
Andropogon virginicus	Broomsedge	*Panicum* sp.	Panicgrass/low panicum
Andropogon virginicus var. *glaucus*	Chalky bluestem	*Paspalum notatum*	Bahiagrass
Aristida stricta	Wiregrass	*Paspalum urvellei*	Vasey's grass
Asimina angustifolia	Slimleaf pawpaw	*Persea borbonia*	Redbay
Asimina spp.	Pawpaw	*Persea palustrus*	Swamp bay
Axonopus furcatus	Big carpet grass	*Phyla nodiflora*	Fog-fruit
Baccharis halimifolia	Eastern false willow	*Phyllanthus* sp.	Leafflower
Baccharis sp.	Baccharis	*Pinguicula caerulea*	Blueflower butterwort
Bacopa caroliniana	Lemon bacopa	*Pinus elliottii*	Slash pine
Bacopa monnieri	Water hyssop	*Pinus palustris*	Longleaf pine
Bacopa sp.	Water hyssop	*Pinus taeda*	Loblolly pine
Bidens mitis	Smallfruit beggarticks	*Plantago lanceolate*	English plantain
Brachiaria sp.	Signal grass	*Plantago sparsiflora*	Pineland plantain
Brassica sp.	Wild mustard	*Pleopeltis polypodioides*	Resurrection fern
Canna sp.	Lily	*Pluchea odorata*	Camphorweed/marsh fleabane
Carex glaucescens	Southern waxy sedge	*Pluchea rosea*	Rosy camphorweed
Carex spp.	Sedges	*Polygala lutea*	Orange milkwort
Celtis laevigata	Sugar-berry	*Polygala ramosa*	Low pine-barren milkwort
Centella asiatica	Centella	*Polygonum* spp.	Smartweed
Cephalanthus occidentalis	Common buttonbush	*Pontedaria cordata*	Pickerelweed
Cinnamomum camphora	Camphor tree	*Proserpinaca palustris*	Mermaid weed
Cirsium horridulum	Yellow thistle	*Proserpinaca pectinata*	Combleaf mermaidweed
Coriopsis floridana	tickseed	*Pteridium aquilinum*	Bracken fern
Cladium jamaicense	Jamaica swamp sawgrass	*Ptilimnium capillaceum*	Herbwilliam
Cladonia spp.	Cup lichen	*Quercus hemisphaerica*	Darlington oak
Cynodon dactylon	Bermuda grass	*Quercus laurifolia*	Laurel oak
Cyperus asiatica	Coinwart	*Quercus nigra*	Water oak

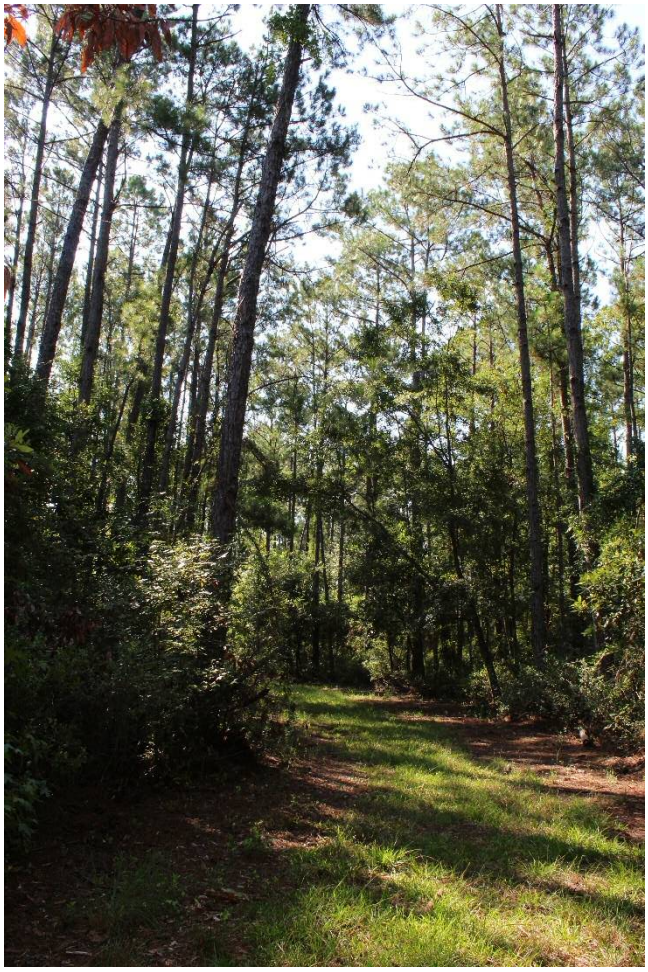
Table 2. Vascular Plant Species at Jacksonville ANGB

Scientific Name	Common Name	Scientific Name	Common Name
Cyperus brivifolius	Green kyllinga	*Quercus virginiana*	Live oak
Cyperus esculentus	Yellow nut sedge	*Reimarochloa oligostachya*	Florida reimar grass
Cyperus odoratus	Fragrant flatsedge	*Rhexia mariana*	Maryland meadow-beauty
Cyperus surinamensis	Surinam sedge	*Rhexia* sp.	Meadow-beauty
Cyrilla racemeiflora	White titi	*Rhynchospora colorata*	Narrow-leaf whitetop sedge
Dichanthelium scabriusculum	Witchgrass	*Rhynchospora fascicularis*	Fascicled beak sedge
Dichondra carolinensis	Dichondria	*Rhynchospora microcarpa*	Beaksedge
Dichromena colorata	White-topped sedge	*Rhynchospora odorata*	Beaksedge
Diodia virginiana	Virginia buttonweed	*Rhynchospora* sp.	Beaksedge
Diospyros virginiana	Common persimmon	*Rubus cuneifolius*	Blackberry
Drosera brevifolia	Dwarf sundew	*Rubus* sp.	Blackberry
Drosera rotundifolia	Round-leaf sundew	Rynchospora inundata	Beakrush
Drymaria cordata	Chickweed	*Sabal minor*	Dwarf palmetto
Eleocharis spp.	Spike rush	*Sabal palmetto*	Cabbage palm
Eragrostis pectinacea	Tufted lovegrass	*Sabatia* sp.	Rosepink
Erigeron sp.	Daisy fleabane	*Saccharum baldwinii*	Narrow plumegrass
Eriocaulon decangulare	Ten-angle pipewort	*Sacciolepis striata*	American cupscale grass
Eriocaulon sp.	Pipewort	*Sagittaria graminae*	Grassy arrowhead
Eupatorium capillifolium	Dog fennel	*Sagittaria lancifolia*	Bull-tongue arrowhead
Euphorbia maculate	Spotted spurge	*Sagittaria* sp.	Arrowheads
Furina squarrosa	Umbrella sedge	*Salix caroliniana*	Carolina willow
Gelsemium sempervirens	Yellow jessamine	*Salix* sp.	Willow
Geranium carolinianum	Carolina geranium	*Sarracenia minor*	Hooded pitcher plant
Gordonia lasianthus	Loblolly bay	*Saururus cernuus*	Lizard tail
Helenium pinnatifidum	Southeastern sneezeweed	*Scirpus* spp.	Bulrush
Hydrocotyle sp.	Pennywort	*Serenoa repens*	Saw palmetto
Hydrocotyle umbellate	Pennywort	*Sesbania herbacea*	Bladderpod
Hypericum cistifolium	St. Peter's wort	Setaria geniculata	Knottroof bristlegrass
Hypericum fasciculatum	Peel-bark St. John's wort	*Setaria* sp.	Bristlegrass
Hypericum hypericoides	St. Andrew's cross	*Sisyrinchium xerophyllum*	Jeweled blue-eyed grass
Hypericum perforatum	Common St. John's wort	*Smilax laurifolia*	Greenbrier
Hypericum sp.	St. John's wort	*Smilax* sp.	Greenbrier
Hypericum tetrapetalum	Fourpetal St. John's wort	*Sphagnum macrophyllum*	Sphagnum moss
Hyptis alata	Clustered bushmint	*Sphagnum* sp.	Sphagnum moss
Ilex cassine	Dahoon holly	*Stenotaphrum secundatum*	Saint Augustine grass
Ilex coriaceae	Sweet gallberry	*Symphyotrichum elliottii*	Marsh American aster
Ilex glabra	Gallberry	*Symplocos tinctoria*	Common sweetleaf
Ilex myrtifolia	Myrtle dahoon	*Syngonanthus flavidulus*	Hatpins
Ilex opaca	American holly	*Taraxacum officinale*	Dandelion
Itea virginica	Virginia sweetspire	*Taxodium ascendens*	Pond cypress
Jasminum sp.	Jasmine	*Taxodium distichum*	Bald cypress
Juncus megacephalus	Big-head rush	*Toxicodendron radicans*	Eastern poison ivy
Juncus spp.	Soft rush	*Triadica sebifera*	Chinese tallow
Juniperus silicicola	Southern red cedar	*Trifolium repens*	White clover
Lachnanthes caroliana	Carolina redroot	*Typha* spp.	Cattail
Lachnocaulon anceps	Whitehead bog button	*Ulmus* sp.	Elm
Lachnocaulon sp.	Bog button	*Utricularia purpurea*	Eastern purple bladderwort
Lingstrum sinesnse	Chinese privet	*Utrichularia subulata*	Zigzag bladderwort
Liquidambar styraciflua	Sweetgum	*Utricularia* sp.	Bladderwort
Lobelia brevifolia	Shortleaf lobelia	*Vaccinium corymbosum*	Highbush blueberry
Lobelia glandulosa	Lobelia	*Vaccinium elliottii*	Elliott's blueberry
Lonicera japonica	Japanese honeysuckle	*Vaccinium myrsinites*	Shiny blueberry

Table 2. Vascular Plant Species at Jacksonville ANGB

Scientific Name	Common Name	Scientific Name	Common Name
Ludwigia repens	Red ludwigia	*Vaccinium* sp.	Blueberry
Lycopodiella sp.	Clubmoss	*Viola lanceolata*	Bog white violet
Lygodium japonicum	Japanese climbing fern	*Vitis rotundifolia*	Muscadine grape
Lyonia lucida	Fetterbush lyonia	*Woodwardia aerolata*	Netted chain fern
Magnolia grandiflora	Southern magnolia	*Woodwardia virginica*	Virginia chain fern
Magnolia virginiana	Sweetbay	*Xyris caroliniana*	Yellow-eyed grass
Morella cerifera	Wax myrtle	*Xyris* sp.	Yellow-eyed grass
Muhlenbergia sp.	Muhly grass		

Source: FANG 2015a, FANG 2018b, FANG 2019



Road leading into forested habitat near munitions building.
Photo by A. Montalvo

5.3 Fish and Wildlife

Wildlife surveys were conducted at Jacksonville ANGB and to document birds, mammals, and herpetofauna. These surveys have documented a number of wildlife species described in **Tables 3–5**. Birds and other wildlife are recorded when aircraft strikes occur at JAX, which abuts the Jacksonville ANGB property. Therefore, species recorded in this database would be in the

vicinity of the Jacksonville ANGB and may be present at the installation. However, it is unclear if these species were utilizing the general vicinity in a transient or more permanent manner. It is likely that they could also use suitable habitat at the Jacksonville ANGB, given the proximity of the installation to the airport (FAA 2011, FAA 2019). Acoustic bat surveys completed in 2018 identified 4 species on the installation. No threatened or endangered bat species were detected during the survey efforts (FANG 2018a).

Clockwise from the top left: wild turkeys, ducks, armadillo foraging hole, and crayfish on Jacksonville ANGB. *Photos by K. Parish and A. Montalvo*

Table 3. Bird Species at Jacksonville ANGB

Scientific Name	Common Name	Scientific Name	Common Name
Accipiter cooperii	Cooper's hawk	*Haliaeetus leucocephalus*	Bald eagle
Accipiter striatus	Sharp-shinned hawk	*Hirundo rustica*	Barn swallow
Agelaius phoeniceus	Red-winged blackbird	*Hylocichla mustelina*	Wood thrush
Anas acuta	Northern pintail	*Icterus galbula*	Baltimore oriole
Anas americana	American widgeon	*Ixobrychus exilis*	Least bittern
Anas clypeata	Northern shoveler	*Lanius ludovicianus*	Loggerhead shrike
Anas fulvigula	Mottled duck	*Larus argentatus*	Herring gull
Anas platyrhynchos	Mallard	*Larus atricilla*	Laughing gull
Anhinga anhinga	Anhinga	*Larus delawarensis*	Ring-billed gull
Antrostomus carolinensis	Chuck-will's-widow	*Mareca strepera*	Gadwall
Ardea alba	Great egret	*Megaceryle alcyon*	Belted kingfisher
Ardea Herodias	Great blue heron	*Melanerpes carolinus*	Red-bellied woodpecker
Baeolophus biclor	Tufted titmouse	*Meleagris gallopavo*	Wild Turkey
Branta canadensis	Canada goose	*Melospiza melodia*	Song sparrow
Bubo virginianus	Great horned owl	*Mimus polyglottos*	Northern mockingbird
Bubulcus ibis	Cattle egret	*Molothrus ater*	Brown-headed cowbird
Buteo jamaicensis	Red-tailed hawk	*Mycteria americana*	Wood stork
Buteo lineatus	Red-shouldered hawk	*Myiarchus crinitus*	Great-crested flycatcher
Buteo platypterus	Broad-winged hawk	*Pandion haliaetus*	Osprey
Butorides virescens	Green heron	*Parkesia noveboracensis*	Northern waterthrush

Table 3. Bird Species at Jacksonville ANGB			
Scientific Name	**Common Name**	**Scientific Name**	**Common Name**
Calidris minutilla	Least sandpiper	*Passerculus sandwichensis*	Savannah sparrow
Cardinalis cardinalis	Northern cardinal	*Phalacrocorax auritus*	Double-crested cormorant
Cathartes aura	Turkey vulture	*Picoides pubescens*	Downy woodpecker
Catharus fuscescens	Veery	*Pipilo erythrophthalmus*	Eastern towhee
Catharus guttatus	Hermit thrush	*Piranga olivacea*	Scarlet tanager
Catharus ustulatus	Swainson's thrush	*Plegadis falcinellus*	Glossy ibis
Chaetura pelagica	Chimney swift	*Poecile carolinensis*	Carolina chickadee
Charadrius semipalmatus	Semipalmated plover	*Progne subis*	Purple martin
Charadrius vociferous	Killdeer	*Quiscalus quiscula*	Common grackle
Chordeiles minor	Common nighthawk	*Riparia riparia*	Bank swallows
Circus hudsonius	Northern harrier	*Sayornis phoebe*	Eastern Phoebe
Columba livia	Rock pigeon	*Seiurus aurocapilla*	Oven bird
Coragyps atratus	Black vultures	*Setophaga americana*	Northern parula
Corvus brachyrhynchos	American crow	*Setophaga castanea*	Bay-breasted warbler
Coryus spp.	Crows	*Septophaga coronata*	Yellow-rumped warbler
Coryus ossifragus	Fish crow	*Setophaga discolor*	Prairie warbler
Cyanocitta cristata	Blue jay	*Setophaga dominica*	Yellow-throated warbler
Dendroica pinus	Pine warbler	*Setophaga palmarum*	Palm warbler
Dolichonyx oryzivorus	Bobolink	*Setophaga ruticilla*	American redstart
Dryocopus pileatus	Pileated woodpecker	*Sialia sialis*	Eastern bluebird
Dumetella carolinensis	Gray catbird	*Spinus tristis*	American goldfinch
Egretta caerulea	Little blue heron	*Spizella passerina*	Chipping sparrow
Egretta thula	Snowy egret	*Strix varia*	Barred owl
Eremophilia alpestris	Horned lark	*Sturnella magna*	Eastern meadowlark
Eudocimus albus	White ibis	*Sturnus vulgaris*	European starling
Falco peregrinus	Peregrine falcon	*Tachycineta bicolor*	Tree swallow
Falco sparyerius	American kestrel	*Thryothorus ludovicianus*	Carolina wren
Fluvialis squatarola	Black-bellied plover	*Tringa flavipes*	Lesser yellowlegs
Fulica americana	American coot	*Troglodytes aedon*	House wren
Gallinago delicata	Wilson's snipe	*Turdus migratorius*	American robin
Gavia immer	Common loon	*Vireo griseus*	White-eyed vireo
Geothlypis trichas	Common yellowthroat	*Vireo olivaceus*	Red-eyed vireo
Grus Canadensis	Sandhill crane	*Zenaida macroura*	Mourning dove
Source: FAA 2019, FANG 2006, LANG 2011, FANG 2015a, FANG 2016, FANG 2018b, FANG 2019			

Table 4. Mammal Species at Jacksonville ANGB			
Scientific Name	**Common Name**	**Scientific Name**	**Common Name**
Canis latrans	Coyote	*Nycticeius humeralis*	Evening bat
Dasypus novemcinctus	Nine-banded armadillo	*Odocoileus virginianus*	White-tailed deer
Didelphis virginiana	Virginia opossum	*Perimyotis subflavus*	Tri-colored bat
Felis catus	Domestic cat	*Procyon lotor*	Raccoon
Lasiurus borealis	Eastern red bat	*Sciurus carolinensis*	Gray squirrel
Lasiurus cinereus	Hoary bat	*Sus scrofa*	Feral pig
Lasiurus intermedius	Northern yellow bat	*Tadarida brasiliensis*	Brazilian free-tailed bat
Lasiurus seminolus	Seminole bat	*Vulpes vulpes*	Red fox
Mephitis mephitis	Striped skunk		
Source: FAA 2019, FANG 2011, FANG 2018a, FANG 2018b, FANG 2019			

Table 5. Herpetofaunal Species at Jacksonville ANGB			
Scientific Name	**Common Name**	**Scientific Name**	**Common Name**
Acris gryllus	Southern cricket frog	*Lithobates clamitans clamitans*	Bronze frog
Acris gryllus dorsalis	Florida cricket frog	*Lithobates grylio*	Pig frog
Anolis carolinensis	Green anole	*Lithobates sphenocephala*	Southern leopard frog
Coluber constrictor priapus	Southern blacksnake	*Opheodrys aestivus*	Rough green snake
Hyla cinerea	Green tree frog	*Scincella laterale*	Ground skink
Hyla squirella	Squirrel tree frog	*Virginia striatula*	Rough earth snake
Source: FANG 2011, FANG 2015a, FANG 2019			

5.4 Threatened and Endangered Species and Species of Concern

Federally-listed species known to occur, or with the potential to occur on the installation include:

- Federally-threatened wood stork (*Mycteria Americana*)
- Federally-endangered eastern indigo snake (*Drymarchon corais couperi*)
- Federally-endangered frosted flatwoods salamander (*Ambystoma cingulatum*)
- Federally-threatened piping plover (*Charadrius melodus*)
- Federally-threatened red knot (*Calidris canutus rufa*)
- Federally-endangered red-cockaded woodpecker (*Picoides borealis*)
- Protected under Bald and Golden Eagle Protection Act (BGEPA) bald eagle (*Haliaeetus leucocephalus*)

State-designated threatened species known to occur or with the potential to occur on the installation include:

- State-designated threatened southeastern American kestrel (*Falco sparverius paulus*)
- State-designated threatened gopher tortoise and candidate species for federal-listing (*Gopherus polyphemus*)
- State-designated threatened Florida pine snake (*Pituophis melanoleucus mugitus*)
- State-designated threatened Florida burrowing owl (*Athene cunicularia floridana*)

Additionally, the west Indian manatee (*Trichechus manatus*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*) are all federally-listed species found in Duval County but are not considered special status species for Jacksonville ANGB because of the absence of essential marine habitat.

A flora and fauna survey for common, rare, threatened, and endangered (RTE), and protected species was conducted at the installation in June 2018 for the primary purpose of surveying for two state threatened plant species, the blueflower butterwort (*Pinguicula caerulea*) and the hooded pitcher plant (*Sarracenia minor*). The locations of these species are documented within that report (FANG 2018).

5.5 Waters of the US, Wetlands, and Floodplains

In Florida, wetlands are regulated by the Florida Department of Environmental Protection (DEP) and the St. Johns River Water Management District (SJWMD) through the regulatory Environmental Resource Permit (ERP). The ERP program operates in addition to the federal program that regulates activities in Waters of the United States.

An initial wetland study covering a majority of the installation delineated 9 wetlands totaling 64.0 acres (FANG 2015b; **Figure 8**). A second study covering the remaining portions of the installation delineated an additional 5 wetlands as well as 2 surface water ditches totaling 25.5 ac (FANG 2018c; **Table 6**; **Figure 9**).

Table 6. Wetlands at Jacksonville ANGB

Report	Wetland Name w/in report	Size	Wetland Jurisdictional Determination	
			Federal	State
2015 Wetland Report	Wetland A	0.9		X
	Wetland B	2.1		X
	Wetland C	0.8		X
	Wetland D	1.0	X	X
	Wetland E	0.6		X
	Wetland F	0.8	X	X
	Wetland G	56.6	X	X
	Wetland H	0.6	X	X
	Wetland I	0.6		X
2018 Wetland Report	Wetland A	9.29	X	X
	Wetland B	0.03	X	X
	Wetland C	3.17	X	X
	Wetland D	12.45	X	X
	Wetland E	0.19	X	X
	Surface Water 1	0.29	-	-
	Surface Water 2	0.11	-	-

Sources: FANG 2015b, FANG 2018c

As shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps from June 2013, most of Jacksonville ANGB is located within Zone X, indicating that the Installation is located outside the 100-year and 500-year floodplains. Small portions of the installation are in Zone AO, indicating river or stream flood hazard areas and are within the 100-year floodplain (FEMA 2013; **Figure 7**).

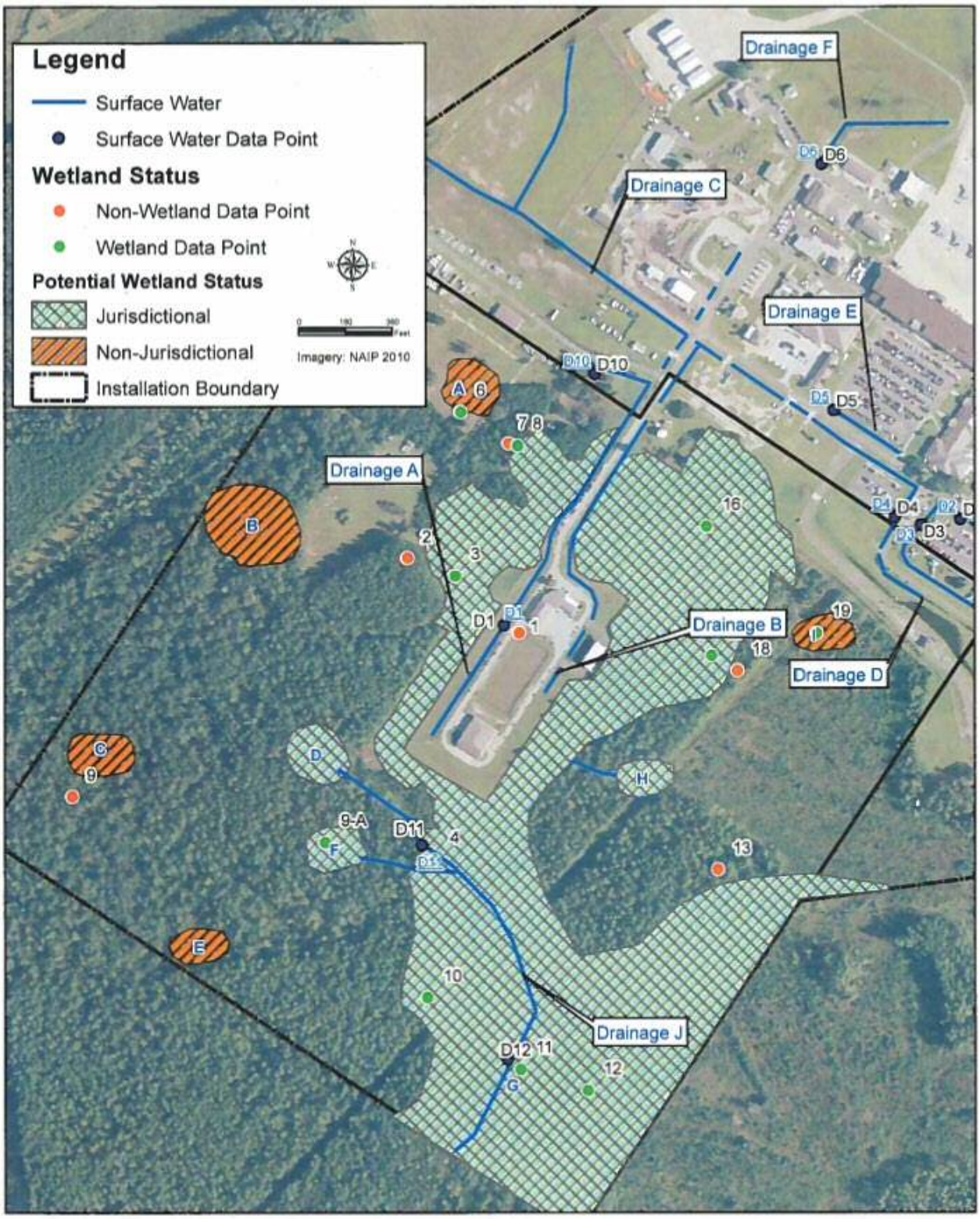


Figure 8. Wetlands and surface water features map from 2015 Wetland Determination Report (FANG 2015b).

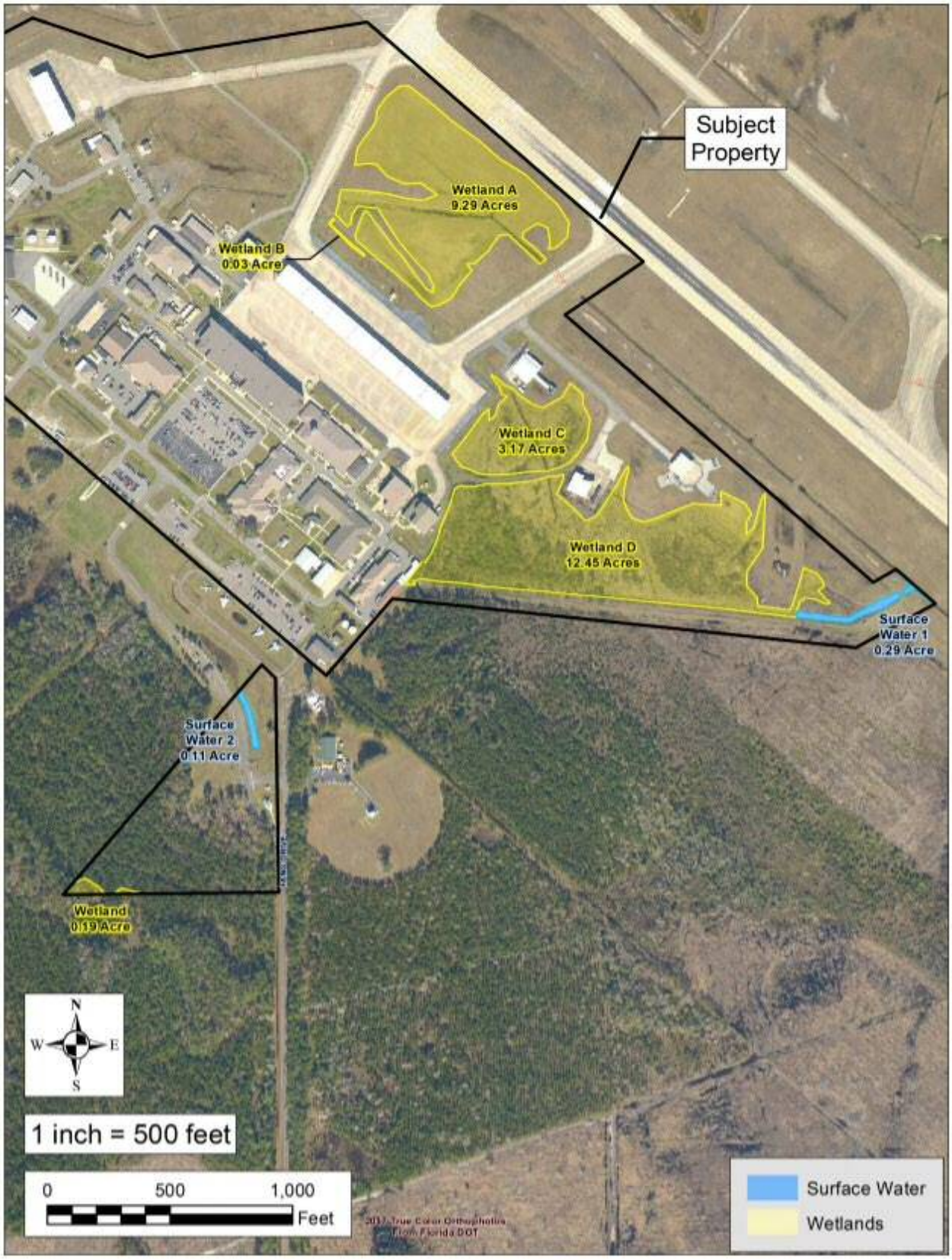


Figure 9. Wetland and surface water features map from the 2018 Jurisdictional Wetland Delineation Report (FANG 2018).

5.6 Other Natural Resource Information

As directed by EO 11989, Off Road Vehicles on Public Lands, outlines the use of any off-road vehicles (ORV), including mountain bikes, will be allowed only after thoroughly analyzing the impact of such use on soils, archeological sites, wildlife, water quality, and other ecosystem attributes. Jacksonville ANGB will periodically monitor and evaluate for damage any areas designated for ORV use.

6.0 MISSION IMPACTS ON NATURAL RESOURCES

6.1 Natural Resources Needed to Support the Military Mission

The Jacksonville ANGB contains operational areas that support flying operations, facilities, and other support functions, with the surrounding areas serving as a buffer to reduce BASH risk and provide support facilities and functions. Degradation of natural resources can result in unintended impacts to the military mission, impaired readiness, and funds spent on natural resources crisis management and interventions rather than the military mission. The Jacksonville ANGB needs the land and its natural resources to function together in a healthy ecosystem to support the military mission. Management activities in this INRMP are designed to support the desired habitats and ecosystem functions.

6.2 Natural Resources Constraints to Mission and Mission Planning

6.2.1 Land Use

Jacksonville ANGB occupies 332 ac. The primary land use designation at the Jacksonville ANGB is open space. Open space areas include undeveloped lands, areas with surface waters or wetlands located mostly around the perimeter of the installation, and areas set aside to comply with safety requirements related to weapons storage and maintenance. To the north, south, and west, the installation is surrounded by undeveloped, partially forested areas. The northeastern half of the installation is densely developed with pavement and facilities supporting the 125 FW's operations. Land uses in these areas include airfield pavement areas, aircraft maintenance, aircraft operations, industrial, command and support, and special categories. The southwestern half of the installation is largely undeveloped and encumbered with quantity distance (QD) arcs associated with the weapons storage and maintenance facilities located there. A substantial, mostly forested buffer between the installation and residential and commercial uses along Lem Turner Road is located to the west.

6.2.2 Current Major Impacts

There are 3 primary areas of potential impacts to natural resources from the FANG's military mission at Jacksonville ANGB:

- Impacts to birds and wildlife from BASH program
- Impacts to federally-listed and state-listed species
- Impacts from hazardous materials and waste handling related to mission activities

6.2.3 Potential Future Impacts

Construction of new buildings and facilities will continue at the installation in support of its current mission and demands of modernization. The discrete and cumulative impacts on the local environment must continually be evaluated.

7.0 NATURAL RESOURCES PROGRAM MANAGEMENT

7.1 Natural Resources Program Management

The guiding philosophy of the Jacksonville ANGB INRMP is to take an ecosystem approach to managing natural resources. Ecosystem management is based on clearly stated goals and objectives, and associated projects. The Jacksonville ANGB INRMP identifies goals and objectives, and presents the means to accomplish them as well as the methodologies to monitor results.

7.2 Fish and Wildlife Management

Wildlife management involves manipulating various aspects of an ecosystem to benefit selected wildlife species. Management of habitats generally is focused to benefit native species, particularly listed species and game species. Wildlife population and habitat management at Jacksonville ANGB will attempt to deter animals from foraging or roosting in areas near or adjacent to areas where they would be in opposition to ANG missions and actions, or where they present a risk to safety or practices. Management actions include attracting wildlife to areas away from these areas, and protecting and conserving threatened and endangered species through habitat conservation at selected locations at the installation. This approach has been chosen due to the relative abundance and variety of wildlife species present at Jacksonville ANGB, and the low likelihood of excluding all wildlife species from the installation that pose a significant threat to the safety of the flying mission.

7.2.1 Federal Wildlife Policies and Regulations

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits, unless permitted by regulations, the pursuit, hunting, take, capture, killing or attempting to take, capture, kill, or possess any migratory bird included in the MBTA, including any part, nest, or egg of any such bird (16 USC § 703). The DoD has a Memorandum of Understanding (MOU) with the USFWS pursuant to EO 13186 Responsibilities of Federal Agencies to Protect Migratory Birds, which outlines a collaborative approach to promote the conservation of migratory bird populations. This MOU specifically pertains to natural resource management activities, including, but not limited to, habitat management, erosion control, forestry activities, invasive weed management, and prescribed burning. It also pertains to installation support functions, operation of industrial activities, construction and demolition activities, and hazardous waste cleanup. In February 2007, the USFWS finalized regulations for issuing incidental take permits to the DoD. If any of the Armed Forces determine that a proposed or an ongoing military readiness activity may result in a significant adverse effect on a population of migratory bird species, then they must confer and

cooperate with the USFWS to develop appropriate and reasonable conservation measures to minimize or mitigate identified significant adverse effects (50 CFR Part 21).

Bald and Golden Eagle Protection Act

The BGEPA (16 USC 668-668c), enacted in 1940 and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Partners in Flight

The DoD Partners in Flight (PIF) program consists of natural resources personnel from military installations across the United States working collaboratively with partners throughout the Americas to conserve migratory and resident birds and their habitats on DoD lands. PIF sustains and enhances the military mission through proactive, habitat-based conservation and management strategies that maintain healthy landscapes and training lands. Additionally, PIF works beyond installation boundaries to facilitate cooperative partnerships, determine the current status of bird populations, and prevent the listing of additional birds as threatened or endangered. DoD PIF provides a scientific basis for maximizing the effectiveness of resource management, enhancing the biological integrity of DoD lands, and ensuring continued use of these lands to fulfill military training requirements.

Pollinator Conservation

DoD has emphasized the importance of pollinator conservation to the military services by developing partnerships to support their conservation. DoD has MOUs with Bat Conservation International (BCI) and Pollinator Partnership (P2) and has developed the USAF Pollinator Conservation Reference Guide (March 2018). The MOU with BCI "establishes a policy of cooperation and coordination between DoD and BCI to identify, document and maintain bat populations and their habitats on DoD installations" (signed Oct 2006, renewed Dec. 2011). The MOU with P2 is "to establish a framework for cooperative programs that promote the conservation and management of pollinators, their habitats and associated ecosystems" (signed February 9, 2015).The MOU states that this framework is important to "ensure that pollinator management activities are incorporated where practicable, into INRMPs and practices." Conservation of pollinators by USAF alone or in collaboration with groups such as BCI and P2 supports these DoD initiatives.

The USAF Pollinator Conservation Reference Guide provides specific pollinator conservation measures which can be implemented by the USAF and ANG. It was finalized March 2018, and is available on USFWS and AFCEC eDASH Natural Resources website. This guide, developed by the USFWS, establishes guidance as a National Pollinator Conservation Strategy on lands owned

by the USAF. It supplements existing policy and instructions to guide USAF actions to contribute to pollinator conservation under Presidential Memo and Federal Pollinator Health Strategy. Further, it provides Technical Guides as reference materials for pollinators of conservation concern (listed species, birds of conservation concern, bees, and monarch butterflies), and native plant recommendations specific to ecoregions.

Some areas of ANG installations are more suitable for pollinator habitat conservation due to current use and/or habitat condition. For example conservation on unimproved (natural) areas, buffers, recreation areas, rights-of-way, golf courses, and landscaped areas may be more compatible with mission requirements than other areas. These areas should be a priority for implementing pollinator habitat improvements and using land management practices in ways beneficial to pollinators.

7.2.2 Nuisance Wildlife and Wildlife Diseases

Other than those that present a BASH risk, there are few nuisance wildlife species at Jacksonville ANGB. Future hazardous wildlife problems will be evaluated in conjunction with USDA-WS personnel, if appropriate. Any solutions to hazardous wildlife problems will follow the IPM Plan, JAX's Wildlife Hazard Management Plan (WHMP; JAX 2015), and the BASH Plan (FANG 2016).

Diseases affecting fish and wildlife may occur on the installation. Any large-scale fish and wildlife deaths and unnatural behavior occurring on the installation will be reported, recorded, and investigated in conjunction with USFWS, USDA-WS, US Environmental Protection Agency (US EPA), and FWC personnel, as appropriate.

7.2.3 Management of Threatened and Endangered Species and Habitats

This section presents information about the management of imperiled species located within or with the potential to occur at Jacksonville ANGB, along with requirements and strategies for their management. As additional surveys and natural resources management activities are conducted, it is possible other species may be added in the future. Currently, there are 13 federally- or state-listed species known to occur or with potential to occur on Jacksonville ANGB.

7.2.3.1 Federally-Listed Species

The FANG is required to manage for federally-listed species. Failure to protect federally-listed species could lead to an ESA violation, which could negatively impact training land availability. Seven federally-listed species have been identified for Jacksonville ANGB and their management strategies are listed below.

Wood Stork: Wood storks are federally-listed as threatened in Duval County. They have been observed in the vicinity of the Jacksonville ANGB but are not currently known to nest at the installation. However, potential foraging habitat includes marshes and swamps, which are found on the property (FANG 2019). Additionally, the installation is located within the core foraging areas of several wood stork nesting colonies (Pumpkin Hill and Jacksonville Zoo). Wood storks prefer to nest in cypress swamps or mangrove swamps. Cypress swamps are present on the adjacent JAX, and potential nesting habitat for this species may also be present at the Jacksonville ANGB. The following management strategies are recommended:

Wood Stork
Photo by USACE

- Develop water-level management strategies to stimulate nesting and to prevent predators from accessing nests
- Limit use of pesticides as described in the IPM Plan, in order to limit indirect impacts
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B06O.

Eastern Indigo Snake: The eastern indigo snake is federally-listed as endangered in Duval County. They can utilize a variety of different habitat types found at the installation or in the general vicinity including pine flatwoods, edges of freshwater marshes, agricultural fields, and human-altered habitats; though the snake prefers habitats with sandhills and areas with abundant wetlands (USFWS 1999). The following management strategies are recommended:

Eastern Indigo Snake
Photo by USFWS

- Limit use of pesticides as described in the IPM Plan, in order to limit indirect impacts
- Avoid disturbance to gopher tortoise burrows
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=C026.

Frosted Flatwoods Salamander: The flatwoods salamander is federally-listed as threatened for Duval County, though sightings of this species have not been confirmed in the county in several years. A recent determination by the USFWS indicated the species was not known to be present either at the Jacksonville ANGB, or in Duval County (FANG 2011). Flatwood salamander habitat includes slash and longleaf pine flatwoods that have a wiregrass floor and scattered wetlands. They are also known to occur within wetland areas containing maidencane (*Panicum hemitomon*), a

Frosted Flatwoods Salamander
Photo by USFWS

large grass which could potentially occur within the installation. The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation.
- Limit use of pesticides as described in the IPM Plan, in order to limit indirect impacts
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=D013.

Piping Plover
Photo by USFWS

Piping Plover: The piping plover is federally-listed as threatened in Duval County. Their habitat includes open, sandy beaches along with tidal mudflats and sandflats (Florida Natural Areas Inventory [FNAI] 2001). The following management strategies are recommended:

- Protect high-use wintering areas from disturbance
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B079.

Red Knot
Photo by USFWS

Red Knot: The red knot is a federally-listed as threatened in Duval County. Their habitat includes coastal mudflats, tidal zones, and open sandy beaches. The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B0DM.

Red-Cockaded Woodpecker
Photo by USFWS

Red-Cockaded Woodpecker: The red-cockaded woodpecker is a federally-listed as endangered in Duval County. Their habitat includes longleaf pine and pond pine ecosystems. The following managmeent strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B04F.

Bald Eagle: Bald eagles are protected under the BGEPA. Bald eagles have been observed on the installation and potential nesting and perching habitat exists within the boundaries Jacksonville ANGB (FANG 2019). The following management strategies are recommended:

- Encounters with bald eagles should be avoided, both within the vicinity of a nest and as part of BASH risk reduction activities
- Modifications to aerial structures and electrical transmission lines should incorporate proven design techniques that discourage bald eagle use, and eliminate or reduce bald eagle hazards
- Limit use of pesticides as described in the IPM Plan, in order to limit indirect impacts to eagles

Bald Eagle
Photo by USFWS

- Limit activity near active nests; FWC has a Bald Eagle Nest Locator (http://myfwc.maps.arcgis.com/apps/webappviewer/index.html?id=253604118279431984e8bc3ebf1cc8e9) which shows the closest confirmed nest site is approximately 2.5 miles southeast of the installation at the intersection of I-95 and I-295
- Additional information and management recommendations can be found at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B008.

7.2.3.2 State-Listed Imperiled Species

Florida works in partnership with the USFWS for the protection of federally threatened and endangered species and provides additional protection for imperiled species state-designated as threatened. Six state-imperiled species have identified for Jacksonville ANGB and their management strategies are listed below.

Southeastern American Kestrel
Photo by FWC

Southeastern American Kestrel: The southeastern American kestrel is a state-designated threatened species. It inhabits open woodlands, sandhill and open pine savannah habitats, and has the potential of occurring within the Installation (FWC 2019a). The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Maintain appropriate cavity trees and dead tree snags as nesting habitat, where feasible
- Additional information and management recommendations can be found at: https://www.fnai.org/FieldGuide/pdf/Falco_sparverius_paulus.pdf; and the Florida Forestry Wildlife Best Management Practices for State Imperiled Species at: https://freshfromflorida.s3.amazonaws.com/Media%2FFiles%2FFlorida-Forest-Service-Files%2FFlorida_Forestry_Wildlife_Best_Management_Practices_For_State_Imperiled_Species_Manual.pdf.

Gopher Tortoise
Photo by USFWS

Gopher Tortoise: The gopher tortoise (*Gopherus polyphemus*) is a state-designated threatened species and is also a candidate species for federal listing. They prefer well-drained, sandy soils found in habitats such as longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes (FWC 2019d). On one occasional a gopher tortoise has been observed in close proximity to the Jacksonville ANGB along the fence line of the perimeter of the airport property (FANG 2011). The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Avoid disturbance of the burrow's apron (e.g., open area at the opening) during the nesting season from early May through September.
- Additional information and management recommendations can be found at: https://www.fnai.org/FieldGuide/pdf/Gopherus_polyphemus.pdf; and the Florida Forestry Wildlife Best Management Practices for State Imperiled Species at: https://freshfromflorida.s3.amazonaws.com/Media%2FFiles%2FFlorida-Forest-Service-Files%2FFlorida_Forestry_Wildlife_Best_Management_Practices_For_State_Imperiled_Species_Manual.pdf.

Florida Pine Snake
Photo by USFWS

Florida Pine Snake: The Florida pine snake is a state-designated threatened species and inhabits areas that feature well-drained sandy soils with moderate to open canopy (FWC 2019c). The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Maintain xeric natural communities while preventing succession to closed canopy forests
- Additional information and management recommendations can be found at: https://www.fnai.org/FieldGuide/pdf/Pituophis_melanoleucus_mugitus.pdf.

Florida Burrowing Owl
Photo by FWC

Florida Burrowing Owl: The Florida burrowing owl is a state-designated threatened species. It inhabits open prairies that have very little understory vegetation including golf courses, airports, pastures, agriculture fields, and vacant lots (FWC 2019b). The following management strategies are recommended:

- Prevent habitat destruction, fragmentation, and degradation
- Locate concentrated heavy equipment operations away from known and visibly apparent active burrows
- Additional information and management recommendations can be found at: https://www.fnai.org/FieldGuide/pdf/Athene_cunicularia_floridana.pdf; the Florida Forestry Wildlife Best Management Practices for State Imperiled Species at: https://freshfromflorida.s3.amazonaws.com/Media%2FFiles%2FFlorida-Forest-Service-Files%2FFlorida_Forestry_Wildlife_Best_Management_Practices_For_State_Imperiled_Species_Manual.pdf; and the Florida Burrowing Owl Species Conservation measures and Permitting Guidelines at: https://myfwc.com/media/2028/floridaburrowingowlguidelines-2018.pdf.

Blueflower Butterwort
Photo by K. Parish

Blueflower Butterwort: The blueflower butterwort is a state-designated threatened perennial herb approximately 8 inches tall with a solitary lavender or whitish flower. They have been observed on the installation west of the munitions building in a small wet prairie (FANG 2015a). The following management strategies are recommended:

- Avoid mowing during the flowering period (spring and early summer) to allow the population to pollinate and set seed
- Additional information and management recommendations can be found at: http://florida.plantatlas.usf.edu/Plant.aspx?id=3136.

Hooded Pitcher Plant: The hooded pitcher plant is a state-designated threatened species. They include a tall and narrow leaf ending in a recurved hood. The pitchers are typically bright red to purple with white translucent areas. Flowers point downwards and are round and yellow. They have been observed on the installation in a dome swamp along the southern boundary and a pine and oak forested area west of the munitions building (FANG 2015a). The following management strategies are recommended:

- Minimize disturbance to habitat from vehicle traffic or stored materials
- Additional information and management recommendations can be found at: http://florida.plantatlas.usf.edu/Plant.aspx?id=3331.

Hooded Pitcher Plant
Photo by K. Parish

7.3 Water and Wetland Resource Protection

The major goal in water and wetland management is to minimize the impact of the Jacksonville ANGB missions. The ANG strives to enhance healthy, functional wetlands that can sustain minor operational influences outside indirect infringement of wetlands. When possible, the goal is set to enhance wetland functions and maximize the values that wetlands have within the ecosystem and to society. It is also the goal to maximize floral diversity of wetland communities, which in turn, maximizes the faunal diversity of the ecosystem.

7.3.1 Regulatory and Permitting

The US Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into Waters of the US, including wetlands, under Section 404 of the Clean Water Act (CWA). Even an inadvertent encroachment into Waters of the US including wetlands resulting in a displacement or movement of soil or fill material has the potential to be viewed as a violation of the CWA if an appropriate permit has not been issued by the USACE. Waters of the US including wetlands are defined under 33 CFR Part 328.3(a) and referred to as Jurisdictional Waters. Jurisdictional Waters may include coastal and inland waters, lakes, rivers, ponds, streams, intermittent streams, vernal pools, wetlands, and other waters, that if degraded or destroyed could affect interstate commerce.

A jurisdictional determination is made based on multiple criteria, but the relationship of the wetland to other Waters of the US is important. Management of wetlands on federal lands and military installations is further governed by EO 11990 and DoDI 4715.03, respectively. Under those instructions, wetlands are required to be managed for no net loss on federal lands, including military installations. In support of these policies, long and short-term adverse impacts associated with the destruction or modification of wetlands and support of new construction in wetlands must be avoided to the maximum extent possible.

According to the US EPA regulations issued under Section 404(b)(1) of the CWA, permitting of fill activities will not be approved unless the following conditions are met: no practicable, less environmentally damaging alternative to the action exists; the activity does not cause or contribute to violations of state water quality standards (or compliance under Section 401 of the CWA); the activity does not jeopardize listed species or sensitive cultural resources (33 CFR Part 320.3 [e] and [g]); the activity does not contribute to significant degradation of Waters of the US;

and all practicable and appropriate steps have been taken to minimize potential adverse impacts to the aquatic ecosystem (40 CFR Part 230.10).

Section 401 of the CWA gives the State of Florida the authority to regulate, through the state water quality certification program, proposed federally-permitted activities resulting in a discharge to water bodies, including wetlands. The state may issue certification, with or without conditions, or deny certification for activities that may result in a discharge to water bodies. In Florida, the Florida DEP is responsible for issuing Section 401 Water Quality Certification.

7.3.2 Vegetation Buffers

Vegetated buffers are also referred to as riparian management zones, riparian buffers, wetland buffers, lake buffers, buffer strips, filter strips, or streamside management areas. Buffers can take many forms and may vary in size and function depending on the upland land use and the type of water resource being protected. They can either be grassland or forest and may or may not be mowed and maintained occasionally. One of the primary purposes of a vegetated buffer is for water quality protection by providing vegetation to interrupt water flow and to trap and filter out suspended sediments, nutrients, chemicals, and other polluting agents before they reach the body of water. Vegetated buffers should be maintained along all perennial and intermittent streams, wetlands, lakes, or ponds where nearby management activities result in surface/soil disturbance, earth changes, and where erosion and sediment transport occurs during rain events. Maintaining the forest cover around small water resources is also important for preventing sedimentation and impacts to water quality.

7.4 Grounds Maintenance

The USAF strives to be a good steward of the environment and to fulfill its military missions, including the effects on natural resources as a result of changes in those missions. 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. Installation grounds maintenance personnel perform most grounds maintenance activities at the Jacksonville ANGB. Grounds maintenance activities performed consist of road maintenance, mowing of open areas, and target repair and replacement.

EO 13148, *Greening the Government through Leadership in Environmental Management*, contains overarching direction regarding management of vegetation in developed areas (National Archives and Records Administration 2011). The order directs federal agencies to strive to promote sustainable management of federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices, and through programs to reduce adverse environmental impacts. Other federal regulations that guide undeveloped vegetation management, as listed in section 5.7, include the federal Noxious Weed Act of 1974, EO 13112, the federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the federal Plant Pest Act, and the Organic Act.

USAF policies and guidelines regarding grounds maintenance and urban forest management are included in Chapter 11 of AFI 32-7064. This document encourages the use of native plants in landscaped designs, minimizing landscape maintenance, minimizing the need for irrigation, and naturalizing landscaped areas as much as possible. The use of integrated pest management

practices is encouraged in both AFI 32-7064 and AFI 32-1053 (Secretary of the Air Force 2009a, 2009b).

7.5 Forest Management

In Florida, timber harvesting is the highest valued agriculture product, with an estimated value of over $16.6 billion from the manufacturing and distribution of forest products each year. These products are an international commodity, and the forest industry is increasingly affected by global supply and demand trends. Forest products may include, and are not limited to, pulp, lumber, plywood, energy and food (woody biomass), carbon sequestration, and recycled paper (Florida Forest Association 2004). Florida's Department of Agriculture and Consumer (FDAC) Service's Forest Service Division was established to protect and manage the forest resources of Florida. The Forest Management Bureau administers programs such as Forest Stewardship, Tree City USA, Silviculture Best Management Practices, and Florida Endangered and Threatened Plant Conservation. The Bureau also oversees management of the state forest system in Florida and coordinates acquisition of new state forests (FDAC 2004).

The Jacksonville ANG supports a large forested ecosystem that is currently not managed as a commercial resource. Several management actions have been defined under other resources such as habitat management and land management that would benefit forested areas throughout the installation.

7.6 Soil Conservation and Sediment Management

The soils on Jacksonville ANGB are susceptible to water erosion if not protected with vegetation or other cover. Maintenance of key ecosystem functions such as erosion control and sediment retention require a healthy, uniform ground cover be established as quickly as possible following land use conversion or disturbance, and that interim soil stabilization measures be implemented.

7.7 Outdoor Recreation, Public Access, and Public Outreach

DoD installations are to provide for sustained public access and use of natural resources for educational or recreational purposes when such access is compatible with mission activities, and with other considerations such as security, safety, or resource sensitivity. Jacksonville ANGB is generally not open to the public and because of the installation's small size, limited recreation potential exists. However, requests for access to the installation can sometimes occur. The security of Jacksonville ANGB personnel, visitors, facilities, and natural resources should be considered when granting access to the installation.

Part of the local mission of Jacksonville ANGB is to actively support the community. Jacksonville ANGB participates in local activities including cleanup days, city beautification efforts, and youth programs.

7.8 Geographic Information Systems

Geographic Information Systems (GIS) is used to manage and catalog information acquired in natural resources research. GIS assists in planning by charting areas of environmental concern and providing a baseline for analyzing the potential impacts of any proposed natural resources management action. Managers can implement the capabilities of GIS to watershed, wetlands,

wildlife, and various other natural resource management applications. GIS needs and requirements will be addressed through the ANG GeoBase Program.

7.9 Other Plans

7.9.1 Integrated Pest Management Plan

IPM objectives at Jacksonville ANGB include the protection of real estate, control of potential disease vectors or animals of other medical importance, control of undesirable or nuisance plants and animals (including insects), and prevention of damage to natural resources. In addition, the potential presence of several zoonotics (e.g., Lyme disease and encephalitis) on the installation, and the potential threat to human health and safety (e.g., transmission of disease) cannot be underestimated.

DoDI 4150.07 states that it is DoD policy to establish and maintain safe, effective, and environmentally sound integrated pest management programs to prevent or control pests and disease vectors that could adversely impact readiness or military operations by affecting the health of personnel or damaging structures, material, or property.

IPM should use mechanical, physical, cultural, biological, and educational methods to maintain pests at populations low enough to prevent undesirable damage or annoyance. Application of the least toxic chemical should be used as a last resort.

Prevention of damage to natural resources is an important objective of pest management. Natural resources damage can result from infestations of damaging insects or insect larvae, from overpopulation of primary consumers such as white-tailed deer, from overgrowths of vegetation where natural resources management objectives demand their removal, and from invasions of noxious or exotic plant species that displace natural and native vegetation. On Jacksonville ANGB, pest management activities are coordinated by the IPM Coordinator. The installation reports annual pesticide application to the NGB/A4AM Pest Management Consultant until such time that a web-based reporting system is back online.

7.9.1.1 Invasive Species

Six invasive species have been documented on Jacksonville ANGB. The observed invasive plants did not affect a significant area on Jacksonville ANGB; estimated area of less than 5% of the installation, mostly in the northeastern corner. Priorities were determined based on likely control of the species and the current or potential impacts to native plants and wildlife (**Table 7**; FANG 2015a, FANG 2018b, FANG 2019). A species was identified as high priority if control (or even eradication on site) is feasible and the impacts from the species are currently or have potential to be significant. In other words, treatment should occur as soon as possible. A species was identified as a low priority species if it would be very difficult to achieve control of the species and the current or potential impacts are relatively low. In other words, the species should be monitored occasionally but no treatment is recommended at this time. Silk tree/mimosa and Chinese privet were identified on the installation in 2019 but were not assigned priority level.

Table 7. Documented Invasive Plant Species on Jacksonville ANGB

Scientific Name	Common Name	Priority
Albizia julibrissin	Silk tree/mimosa	*
Cinnamomum camphora	Camphor tree	Low
Ligustrum sinense	Chinese privet	*
Lygodium japonicum	Japanese climbing fern	High
Panicum repens	Torpedo grass	Low
Triadica sebifera	Chinese tallow tree	High

** = not defined*
Sources: FANG 2015a, FANG 2019

The results of the 2015 vegetation survey do not indicate an immediate need for a comprehensive invasive plant control plan, although the high priority invasive plant species should be incorporated into the IPM Plan. If the populations of these species expand or if additional invasive plant species appear on Jacksonville ANGB, then a focused invasive plant survey should be completed and an Invasive Plant Control Plan should be developed.

7.9.2 Bird/Wildlife Aircraft Strike Hazard

As users of the JAX runways, the FANG implements a BASH Plan (FANG 2016) and supports implementation of JAX's WHMP (JAX 2015). The BASH Plan has established specific procedures intended to reduce known and future hazards from birds, including the development of a BHWG. The BHWG is chaired by the Wing Commander and is responsible for developing, implementing, and updating the BASH Plan and reviewing BASH incidents. At Jacksonville ANGB, BASH projects and activities are led by the Safety Office, implemented by USDA-WS, and are in coordination with the Environmental Office.

Wildlife management and control measures include a number of dispersal methods available to Jacksonville ANGB, USDA-WS, and airport personnel on an as-needed basis. Active harassment activities include a combination of frightening devices which are used whenever birds are present on the airfield or in the surrounding area. In addition to active harassment, BASH management techniques include rodent control and depredation. USDA-WS personnel also utilize capture, band, and translocation techniques for hazardous raptors, falcons, and owls on the facility. Management of habitat, however, is the most effective and cost-efficient form of minimizing BASH risk. Habitat management serves as the foundation of all other wildlife hazard mitigation efforts on the airfield (e.g., mowing, weed control, planting areas of bare ground with grass).

More than 95% of all reported incidents in which a USAF aircraft has struck a bird have been below 3,000 feet above ground level. Approximately half of these bird strikes occur in an airfield environment. Strike rates rise significantly as altitude decreases, which is partly due to the greater number of low-altitude missions, but mostly because birds are commonly active nearer to the ground. Any gain in altitude represents a substantially reduced threat of a bird-aircraft strike. The potential exists for future bird strikes at Jacksonville ANGB, but there are many management strategies and protocols being implemented by FANG, USDA-WS, and JAX. The strategies include:

- Prohibiting feeding or attracting birds or wildlife.
- Maintaining uniform grass height between 7-14 inches on the airfield.

- Controlling broad-leaved weeds.
- Planting areas of bare ground with grass.
- Removal of all trees in the airfield operating area.
- Avoiding landscaping that would attract wildlife on the airfield.
- Minimizing habitat edges, or transitions (ecotones), on the airfield.
- Removing dead vegetation and animals.
- Controlling pests.
- Maintaining drainage ditches and eliminating standing water.
- Maintaining fencing to recommended standards.
- Hazardous bird/mammal harassment, dispersal, and removal.
- Raptor, falcon, and owl capture and translocation.
- Continued surveillance, monitoring, and inspections.
- Wildlife strike reporting.
- Using appropriate vegetation for erosion control.
- Using anti-perching devices where appropriate.
- Eliminating roosting areas.
- Bird-proofing buildings and other structures.

Strikes to FANG aircraft involved killdeer, barn swallows, bank swallows, chimney swifts, gray catbirds, eastern meadowlarks, yellow-rumped warblers, a black vulture, American kestrel, common loon, black-bellied plover, laughing gull, common nighthawk, mourning dove, American robin, horned lark, bobolink, common yellowthroat, and several other small passerines. Also struck, was a Seminole bat and a very significant damaging historical strike to an F-16 with a feral pig. The local situation changes throughout the year with migrant birds such as waterfowl (including a growing population of resident Canada geese), gulls, egrets, herons, shorebirds, raptors, crows, doves, swallows, starlings, and blackbirds posing the most potential problems during both migration periods and resident species causing hazards throughout the year.

The airfield is partially surrounded by an interior wildlife fence that was constructed after a significant strike to an ANG F-16 with a feral pig. The fence acts to deter wildlife such as white-tailed deer, coyotes, red foxes, and other mammals from entering the airfield. This fence meets the FAA requirements for wildlife deterrence and significantly improves the mitigation efforts on the airfield. The entire airfield is surrounded by an exterior security fence that further deters wildlife from entering the field and animals are not as commonly observed on the field as they were in the past. However, remaining patches of forest, brush, and wetland vegetation on airport and ANG property inside security fences do occasionally attract and hold mammal species as well as a variety of birds. Breeches under the fences or through gaps in the gates do occur and should be addressed as required.

Based on data from observations made by NGB, USAF bird/wildlife strike database records, FAA wildlife strike database records, and the JAX's internal documentation, the bird species in **Table 8** are considered most hazardous to 125 FW operations because of large size, abundance, flocking behavior, formation of large roost sites, habitat of occupying airfields, or negative secondary effects due to their presence on the field. These species should be addressed by management measures described in the BASH Plan (FANG 2016).

Table 8. Most hazardous bird identified in the vicinity of JAX and local FANG Operating Areas

Scientific Name	Common Name	Scientific Name	Common Name
Agelaius phoeniceus	Red-winged blackbird	*Corvus ossifragus*	Fish crow
Anas acuta	Northern pintail	*Falco sparverius*	American kestrel
Anas americana	American widgeon	*Larus atricilla*	Laughing gull
Anas clypeata	Northern shoveler	*Larus delawarensis*	Ring-billed gull
Anas platyrhynchos	Mallard	*Mareca strepera*	Gadwall
Ardea herodias	Great blue heron	*Meleagris gallopavo*	Wild turkey
Branta canadensis	Canada goose	*Mycteria americana*	Wood stork
Bubulcus ibis	Cattle egret	*Phalacrocorax auritus*	Double-crested cormorant
Buteo jamaicensis	Red-tailed hawk	*Quiscalus quiscula*	Common grackle
Cathartes aura	Turkey vulture	*Sturnella magna*	Eastern meadowlark
Charadrius vociferus	Killdeer	*Sturnus vulgaris*	European starling
Columba livia	Rock pigeon	*Turdus migratorius*	American robin
Coragyps atratus	Black vulture	*Zenaida macroura*	Mourning dove
Corvus brachyrhynchos	American crow		

Source: FANG 2016

8.0 MANAGEMENT GOALS AND OBJECTIVES

Goals and objectives provide the framework for natural resources management programs. Goals provide a general guiding direction for each technical area and objectives are more specific actions that facilitate achieving those goals. The objectives then drive the development of specific projects. Management goals and objectives for the Jacksonville ANGB INRMP were developed through a thorough evaluation of the natural resources present on the installation in accordance with AFI 32-7064 and the principles of adaptive ecosystem management by an interdisciplinary team of biologists, planners, and environmental scientists. Goals and objectives should be revised over time to reflect evolving environmental conditions, adaptive management, and the completion of tasks as the INRMP is implemented.

GOAL – Natural Resources Program Management (PM): Manage natural resources in a manner that is compatible with, and supports the military mission while complying with applicable federal and state laws, and USAF regulations and policies.

OBJECTIVE PM1: Coordinate an annual review of the FANG INRMP with internal stakeholders, the USFWS, and FWC and monitor the progress of goals and objectives. Update and document the INRMP accordingly.

OBJECTIVE PM2: Use adaptive, ecosystem management as the primary natural resources management paradigm. Ensure the INRMP is integrated with other plans such as the IPM Plan and BASH Plan.

OBJECTIVE PM3: Continue public outreach and develop educational materials that focus on ecosystem and natural resources management to increase awareness and potentially minimize impacts.

OBJECTIVE PM4: Continue to cooperate with other agencies and local landowners on regional land and natural resource management.
OBJECTIVE PM5: Ensure the annual budget is prepared and implement for the fiscal year's activities.

GOAL – Threatened and Endangered Species Management (TE): Manage Jacksonville ANGB on a regional ecosystem-based approach that manages sensitive species and their associated ecosystems while protecting the operational functionality of installation's missions; ensure that Jacksonville ANGB remains in compliance with the ESA and appropriate state regulations; promote natural resources and ecosystem management in the local region that benefits the functionality of the ecosystems, benefitting listed species; and protect sensitive wildlife habitats on Jacksonville ANGB

OBJECTIVE TE1: Conduct further surveys for the presence or potential presence of any federally threatened or endangered species. Surveys should include state imperiled species. Identify the location(s) of wildlife populations and habitat areas specific to any of the aforementioned species. Determine the management criteria for any listed species identified on FANG.
OBJECTIVE TE2: Maintain T&E inventory or database and establish a GIS layer. Update and incorporate data into annual INRMP reviews.

GOAL – Waters of the US/Wetland Management and Protection (WT): Update and maintain jurisdictional determinations for wetlands to minimize potential impacts and encroachments.

OBJECTIVE WT1: Maintain the Waters of the US including wetlands, inventory and conduct jurisdictional determinations to include GIS mapping.
PROJECT WT1.1: Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.
OBJECTIVE WT2: Protect or develop wetlands (e.g. establish/repair buffers, post signage) where feasible and does not impact the mission.
PROJECT WT2.1: Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.
OBJECTIVE WT3: Educate Installation personnel on the location of waters and wetlands on the Installation and the regulations that pertain to them (e.g. construction activities, human disturbances).
PROJECT WT3.1: Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.

GOAL – Floodplains and Watershed Management (WP): Remain in compliance with federal, state, local, and USAF environmental regulations; continue to implement storm water pollution prevention best management practices (BMPs) and improve water quality by reducing erosion and impervious areas; and manage no net loss of floodplain acreage, functions and values.

OBJECTIVE WP1: Increase water quality benefits by limiting sedimentation in nearby waterways. Use and implement erosion and sediment control procedures for exposed soil areas.
PROJECT WP1.1: On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.

GOAL – Nuisance and Non-Native Species Management (NS): Establish and maintain safe, effective, and environmentally sound integrated pest management programs to prevent or control pests that could adversely impact readiness or military operations.

OBJECTIVE IN1: Manage invasive species by maintaining native vegetation.

PROJECT IN1.1: Monitor the density and spread of invasive species.

PROJECT IN1.2: Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.

PROJECT IN1.3: Develop native plant species list for landscaping and construction activities, and to revegetate exposed soils.

OBJECTIVE IN2: Coordinate implementation of pest management projects with the Installation's Pest Management Coordinator (IPMC).

PROJECT IN2.1: Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.

OBJECTIVE IN3: Conduct invasive and nonnative species control to mitigate pests.

PROJECT IN3.1: Develop and implement an invasive and nonnative species survey and plan.

GOAL – Forestry Management (FM): Implement sound forestry practices that promote biodiversity, ecosystem function, and disease control; protect real estate investment from unnecessary depreciation or depletion of forestry resources; and restore health and vigor to native forest ecosystem and improve forest health. Coordinate effort with JAX Forest Management Plan.

OBJECTIVE FM1: Conduct a tree inventory which can assist in determining where to locate any necessary firebreaks.

PROJECT FM1.1: Conduct a tree inventory of the Jacksonville ANG site to obtain baseline information on the extent of forested areas and timber resources. Develop GIS layers reflecting inventory results for use in planning.

9.0 ANNUAL WORK PLANS

The INRMP Annual Work Plans contain projects listed by fiscal year (FY). For each project, a specific fiscal year for implementation is provided (as applicable), as well as the office of primary responsibility (OPR), funding source, and priority for implementation (**Tables 9-13**). Priorities are defined as follows:

- High: The INRMP signatories assert that if the project is not funded the INRMP is not being implemented and the ANG is non-compliant with the Sikes Act; or that it is specifically tied to an INRMP goal and objective and is part of a "Benefit of the Species" determination necessary for ESA Sec 4(a)(3)(B)(i) critical habitat exemption.
- Medium: Project supports a specific INRMP goal and objective, and is deemed by INRMP signatories to be important for preventing non-compliance with a specific requirement within a natural resources law or by EO 13112 on Invasive Species. However, the INRMP signatories will not contend the INRMP is not being implemented if the project is not accomplished within the programmed year due to other priorities.
- Low: Project supports a specific INRMP goal and objective, enhances conservation resources or the integrity of the installation mission, and/or support long-term compliance with specific requirements within natural resources law; but is not directly tied to specific compliance within the proposed year of execution.

Table 9. Work Plans FY 2020		
Project	**Funding Source**	**Priority Level**
Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.		Medium
Monitor regularly for new invasive species or sudden increases in density of existing invasive species.		Medium
Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.		High
Continue supporting BASH risk reduction measures, modifying management strategies if BASH risk increases and/or high BASH risk species increase.		High
Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.		High
Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.		High
Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.		High
Monitor federal and state changes to listed species.		High
On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.		High
Prepare budget to implement the natural resources management program.		High
Complete annual review of INRMP.		High
Determine the need for an invasive species study and management plan.		High
Develop native plant species list for landscaping and construction activities, and to revegetate exposed soils.		Medium

Table 10. Work Plans FY 2021		
Project	**Funding Source**	**Priority Level**
Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.		Medium
Monitor regularly for new invasive species or sudden increases in density of existing invasive species.		Medium
Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.		High
Continue supporting BASH risk reduction measures, modifying management strategies if BASH risk increases and/or high BASH risk species increase.		High
Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.		High
Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.		High
Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.		High
Monitor federal and state changes to listed species.		High
On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.		High
If determined necessary, conduct Invasive Species Study and develop an Invasive Species Management Plan.		Medium
Prepare budget to implement the natural resources management program.		High
Complete annual review of INRMP.		High

Table 11. Work Plans FY 2022		
Project	**Funding Source**	**Priority Level**
Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.		Medium
Monitor regularly for new invasive species or sudden increases in density of existing invasive species.		Medium
Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.		High
Continue supporting BASH risk reduction measures, modifying management strategies if BASH risk increases and/or high BASH risk species increase.		High
Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.		High
Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.		High
Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.		High
Monitor federal and state changes to listed species.		High
On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.		High
Conduct a tree inventory of the Jacksonville ANG site to obtain baseline information on the extent of forested areas and timber resources. Develop GIS layers reflecting inventory results for use in planning.		Medium
Prepare budget to implement the natural resources management program.		High
Complete annual review of INRMP.		High

Table 12. Work Plans FY 2023		
Project	**Funding Source**	**Priority Level**
Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.		Medium
Monitor regularly for new invasive species or sudden increases in density of existing invasive species.		Medium
Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.		High
Continue supporting BASH risk reduction measures, modifying management strategies if BASH risk increases and/or high BASH risk species increase.		High
Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.		High
Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.		High
Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.		High
Monitor federal and state changes to listed species.		High
On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.		High
Prepare budget to implement the natural resources management program.		High
Complete annual review of INRMP.		High

Table 13. Work Plans FY 2024		
Project	**Funding Source**	**Priority Level**
Monitor pest populations to ensure the effectiveness of the IPM Plan and recommend changes to the Plan to the IPMC.		Medium
Monitor regularly for new invasive species or sudden increases in density of existing invasive species.		Medium
Monitor forested areas for any signs of disease or infestation and contact a certified forester and/or arborist if needed.		High
Continue supporting BASH risk reduction measures, modifying management strategies if BASH risk increases and/or high BASH risk species increase.		High
Semi-annually inspect Waters of the US/wetlands for disturbance activities and/or physical changes.		High
Maintain native habitats and minimize excessive human disturbances. Maintain or enhance vegetative upland buffers as required by state/county law.		High
Monitor construction projects and other land disturbing activities. If encroachments or disturbances are unavoidable, obtain the proper permits from the FDEP and/or USACE.		High
Monitor federal and state changes to listed species.		High
On an annual basis, monitor installation for areas of denuded vegetation and erosion, inspect and maintain BMPs.		High
Seek re-verification/concurrence of Waters of the US and wetland jurisdictional determination from USACE by January 30, 2024.		High
Prepare budget to implement the natural resources management program.		High
Complete review for operation and effect at least every 5 years with INRMP Task Force. Initiate update or revision as appropriate.		High

10.0 INRMP IMPLEMENTATION, UPDATE, AND REVISION PROCESS

10.1 INRMP Implementation

In accordance with AFI 32-7064, an INRMP is considered implemented if an installation:

- Actively requests, receives, and uses funds for "must fund" projects as defined by Chapter 4 of AFI 32-7001 (Environmental Quality Programming and Budgeting).
- Executes all "must fund" projects in accordance with specific time frames identified in the INRMP.
- Prepares the INRMP in cooperation with appropriate stakeholders. Notifies stakeholders when a new or revised INRMP will be prepared, and solicits participation and input to the INRMP development and review process.
- Ensures that sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP.
- Ensures INRMP has been approved in writing by the appropriate representative from each cooperating agency within the past 5 years.
- Reviews the INRMP annually and coordinates annually with cooperating agencies.
- Establish and maintain regular communications with the appropriate federal and state agencies for the region where the installation is located.
- Documents specific INRMP action accomplishments undertaken each year.
- Ensures INRMP updates and reviews are conducted in cooperation with the USFWS, FWC, and National Oceanic and Atmospheric Administration (NOAA), where applicable.
- Ensures the INRMP implements ecosystem management on ANG installations by setting goals for attaining a desired land condition.

Natural resource and land use management issues are not the only factors contributing to the development and implementation of the INRMP. Facility management and other seemingly unrelated issues affect implementation. It is important to the implementation of this INRMP that Jacksonville ANGB personnel take ownership of the INRMP to provide the necessary resources (e.g. personnel and equipment), and to utilize the appropriate funding allocated by the ANG NGB/A4AM to enact the INRMP. It is extremely important that the INRMP Working Group continue to participate in the implementation of this INRMP. The INRMP Working Group is made up of the key Jacksonville ANGB personnel, and has an oversight role to ensure the effective implementation of this INRMP. Top and middle-level management representation, as well as representation from several individuals with day-to-day on-site experience will provide the INRMP Working Group with the leadership and structure necessary for the successful implementation of this INRMP.

10.1.1 Monitoring INRMP Implementation

10.1.1.1 Jacksonville ANGB INRMP Implementation Analysis

The Jacksonville ANGB INRMP implementation will be monitored for meeting the legal requirements of the Sikes Act as well as for other mission and biological measures of effectiveness. The ultimate successful implementation of this INRMP is realized in no net loss in the capability of the Jacksonville ANGB training lands to support the military mission while at the same time providing effective natural resources management.

In order to monitor and evaluate the effectiveness of the INRMP implementation, the following will be reviewed as applicable and discussed within the context of the annual review and/or a formal review of operation and effect:

- Impacts to/from the military mission.
- Conservation program budget.
- Staff requirements.
- Program and project implementation.
- Trends in species and habitat diversity as evidenced by recurring biological surveys, land use changes, and opinions of natural resource experts.
- Compliance with regulatory requirements.
- Feedback from military trainers, the USFWS, the FWC, and others.

Some of these areas may not be looked at every year due to lack of data or pertinent information. The effectiveness of this INRMP as a mission enabling conservation tool will be decided by mutual agreement of the USFWS, the FWC, and Jacksonville ANGB during annual reviews and/or reviews for operation and effect.

10.1.1.2 USAF and DoD INRMP Implementation Monitoring

The USAF uses the Defense Environmental Programs Annual Report to Congress (DEPARC) to monitor Sikes Act compliance. DEPARC is the automated system used to collect installation environmental information for reporting to DoD and Congress. Established to fulfill an annual requirement to report the status of DoD's Environmental Quality program to Congress, DEPARC collects information on enforcement actions, inspections and other performance measures for high-level reports and quarterly reviews. DEPARC also helps the USAF track fulfillment of DoD Measures of Merit requirements. The Deputy under Secretary of Defense's (DUSD) Updated Guidance for Implementation of the Sikes Act also includes an updated Conservation Metrics for Preparing and Implementing INRMPs section. Progress toward meeting these measures of merit is reported in the annual report to Congress.

10.1.2 Priorities and Scheduling

The Office of Management and Budget considers funding for the preparation and implementation of this INRMP, as required by the Sikes Act, to be a high priority. However, the reality is that not all of the projects and programs identified in this INRMP will receive immediate funding. Therefore, projects need to be funded consistent with timely execution to meet future deadlines. Projects are generally prioritized with respect to compliance. Highest priority projects are projects related to recurring or current compliance, and these are generally scheduled earliest. The prioritization of the projects is based on need, legal drivers, and ability to further implement the INRMP.

Current compliance includes projects needed because an installation is currently or will be out of compliance if projects are not implemented in the current program year. Examples include:

- Environmental analyses, monitoring, and studies required to assess and mitigate potential effects of the military mission on conservation resources.
- Planning documents.
- Baseline inventories and surveys of natural and cultural resources (historical and archaeological sites).
- Biological Assessments (BAs), surveys, or habitat protection for a specific listed species.

- Mitigation to meet existing regulatory permit conditions or written agreements.
- Wetland delineations in support of subsequent jurisdictional determinations.
- Efforts to achieve compliance with requirements that have deadlines that have already passed.
- Initial documenting and cataloging of archaeological materials.

Maintenance requirements include those projects needed that are not currently out of compliance but shall be out of compliance if projects are not implemented in time to meet an established deadline beyond the current program year. Examples include:

- Compliance with future requirements that have deadlines.
- Conservation and GIS mapping to be in compliance.
- Efforts undertaken in accordance with non-deadline specific compliance requirements of leadership initiatives.
- Wetlands enhancement in order to achieve the EO for no net loss or to achieve enhancement of existing degraded wetlands.
- Public education programs that educate the public on the importance of protecting natural resources.

Lower priority projects include those that enhance conservation resources of the installation mission, or are needed to address overall environmental goals and objectives, but are not specifically required under regulation or EO, and are not of an immediate nature. These projects are generally funded after those of higher priority are funded. Examples include:

- Community outreach activities, such as Earth Day and Historic Preservation Week activities.
- Educational and public awareness projects, such as interpretive displays, oral histories, nature trails, wildlife checklists, and conservation teaching materials.
- BAs, biological surveys, or habitat protection for a non-listed species.
- Restoration or enhancement of cultural or natural resources when no specific compliance requirement dictates a course or timing of action.
- Management and execution of volunteer and partnership programs.

10.1.3 Funding

Implementation of this INRMP is subject to the availability of annual funding. Funding sources for specific projects can be grouped into 3 main categories by source: federal ANG or NGB funds, other federal funds, and non-federal funds. When projects identified in the plan are not implemented due to lack of funding, or other compelling circumstances, the installation will review the goals and objectives of this INRMP to determine whether adjustments are necessary. Funding options include:

- The Legacy Resource Management Program provides financial assistance to DoD efforts to conserve natural and cultural resources on federal lands. Legacy projects could include regional ecosystem management initiatives, habitat preservation efforts, archeological investigations, invasive species control, and/or flora or fauna surveys. Project proposals are submitted to the Legacy program during their annual funding cycle (https://www.dodlegacy.org/Legacy/index.aspx).

- There are also grant and assistance programs administered by other federal agencies that could be accessed for natural resources management at Jacksonville ANGB. Examples include funds associated with the CWA and endangered species.
- Other non-federal funding sources that could be considered include The Public Lands Day Program, which coordinates volunteers to improve the public lands they use for recreation, education, and enjoyment, and the National Environmental Education and Training Foundation, which manages, coordinates, and generates financial support for the program (https://www.neefusa.org/npld).
- Jacksonville ANGB may also consider entering into cooperative or mutual aid agreements with states, local governments, non-governmental organizations, and other individuals.

10.1.4 Cooperative Agreements

The DoD and subcommand entities have MOU, Memorandums of Agreement (MOA), and other cooperative agreements with other federal agencies, conservation and special interest groups, and various state agencies in order to provide assistance with natural resources management at installations across the US. Generally, these agreements allow installations and agencies, or conservation and special interest groups to obtain mutual conservation objectives. The DoD agreements applicable to Jacksonville ANGB include:

- MOU between DoD and USFWS/International Fund for Animal Welfare (IFAW) to promote the conservation of migratory birds (2011).
- MOU between DoD and USFWS/IFWA for a Cooperative Integrated Natural Resource Program associated with the ecosystem-based management of fish, wildlife, and plant resources on military lands (2006).
- MOU between the DoD and US EPA to form a working partnership to promote environmental stewardship by adopting IPM strategies to reduce the potential risks to human health and the environment associated with pesticides (2012).
- MOA for federal Neotropical Migratory Bird Conservation Program and addendum (Partners in Flight-Aves De Las Americas) among DoD, through each of the Military Services, and over 110 other federal and state agencies and non-governmental organizations (1991).
- MOU between the DoD and Ducks Unlimited, Inc. to provide a foundation for cooperative development of selected wetlands and associated uplands in order to maintain and increase waterfowl populations and to fulfill the objectives of the North American Waterfowl Management Plan, within the context of DoD's environmental security and military missions (2006).
- MOU between DoD and NRCS to promote cooperative conservation, where appropriate (2006).
- MOU with Watchable Wildlife Incorporated (2002).
- MOU between the DoD and BCI to identify, document, and maintain bat populations and habitats on DoD installations (2011).
- MOA between FAA, USAF, US Army, US EPA, USFWS, and USDA to address aircraft-wildlife strikes (2003).
- Cooperative Agreement between DoD and The Nature Conservancy to work cooperatively in areas of mutual interest (2010).
- Cooperative Agreement between FANG and USDA-WS (2013).

- Interagency Agreement (2010) and MOU (2009) between USAF and US Forest Service (USFS) to enhance cooperation and improve public service, and management of natural and cultural resources on lands managed by the USAF and the USFS.

For a further list of cooperative agreements and MOUs please visit:
https://www.denix.osd.mil/announcements/unassigned/sikes-tripartite-mou/
https://www.denix.osd.mil/arc/derpfy2002/unassigned/appendix-d-interagency-agreements-dsmoas-atsdr-and-cooperative-agreements-derp-fy02/

10.1.5 Consultations Requirements

The Jacksonville ANGB has multiple natural resources consultation requirements in addition to the INRMP development and review requirements as identified in the Sikes Act. Federally-listed species management requires ESA Section 7 consultation with the USFWS. State-listed species management, as well as game species management, requires consultation with FWC. Actions that fall under the jurisdiction of Section 401 of the CWA necessitate permitting from Florida DEP, while Section 404 actions necessitate permitting from the USACE, Savannah District.

10.2 Annual INRMP Review and Coordination Requirements

Per DoD policy, Jacksonville ANGB will review the INRMP annually in cooperation with the USFWS and FWC. On an annual basis, the EM will invite the USFWS Regional Office, the USFWS North Florida Ecological Services Field Office, the FWC, and ANG NGB/A4AM to attend a meeting or participate in a conference call to review previous year INRMP implementation and discuss implementation of upcoming programs and projects. Invitations will be either by letter or email. Attendance is at the option of those invited, but at minimum the USFWS North Florida Ecological Services Field Office and a representative of FWC are expected to attend. The meeting will be documented with an agenda, meeting minutes, and sign-in roster of attendees.

At this annual meeting the need for updates or revisions will be discussed. If updates are needed, Jacksonville ANGB will initiate the updates and, after agreement of all 3 parties, they will be added to the INRMP. If it is determined that major changes are needed, all 3 parties will provide input and an INRMP revision will be initiated with Jacksonville ANGB acting as the lead coordinating agency. The annual meeting will be used to expedite the more formal review for operation and effect and, if all parties agree and document their mutual agreement, it can fulfill the requirement to review the INRMP for operation and effect.

If not already determined in previous annual meetings, by the fourth year annual review a determination will be made jointly to continue implementation of the existing INRMP with updates or to proceed with a revision. If the parties feel that the annual reviews have not been sufficient to evaluate operation and effect and they cannot determine if the INRMP implementation should continue or be revised, a formal review for operation and effect will be initiated. The determination on how to proceed with INRMP implementation or revision will be made after the parties have had time to complete this review.

As part of the annual review, Jacksonville ANGB will specifically:

- Invite feedback from USFWS and FWC on the effectiveness of the INRMP.

- Inform USFWS and FWC which INRMP projects are required to meet current natural resources compliance needs.
- Document specific INRMP action accomplishments from the previous year.

10.3 INRMP Update, and Revision Process

10.3.1 Review for Operation and Effect

Not less than every 5 years, the INRMP will be reviewed for operation and effect to determine if the INRMP is being implemented as required by the Sikes Act and contributing to the management of natural resources at Jacksonville ANGB. The review will be conducted by the 3 cooperating parties to include the Commander responsible for the INRMP, the Supervisor of the USFWS North Florida Ecological Services Field Office, and Executive Director of the FWC. While these are the responsible parties, technical representatives generally are the personnel who actually conduct the review.

The review for operation and effect will either conclude that the INRMP is meeting the intent of the Sikes Act and only needs an update and implementation can continue; or that it is not effective in meeting the intent of the Sikes Act and it must be revised. The conclusion of the review will be documented in a jointly executed memorandum, meeting minutes, or in some way that reflects mutual agreement.

If only updates are needed, they will be completed in a manner agreed to by all parties. The updated INRMP will be reviewed by the local USFWS North Florida Ecological Services Field Office and FWC. Once concurrence letters or signatures are received from the Supervisor of the USFWS North Florida Ecological Services Field Office and the FWC Executive Director, the update of the INRMP will be complete and implementation will continue. Generally, the environmental impact analysis will continue to be applicable to updated INRMPs, and a new analysis will not be required.

If a review of operation and effect concludes that an INRMP must be revised, there is no set time to complete the revision. The existing INRMP remains in effect until the revision is complete and USFWS and FWC concurrence on the revised INRMP is received. Jacksonville ANGB will endeavor to complete such revisions within 18 months, depending upon funding availability. Revisions to the INRMP will go through a detailed review process similar to development of the initial INRMP to ensure Jacksonville ANGB’s military mission, USFWS, and FWC concerns are adequately addressed, and the INRMP meets the intent of the Sikes Act.

11.0 APPENDICES

APPENDIX A. REFERENCES

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APPENDIX B. LAW, REGULATIONS, POLICIES, AND EXECUTIVE ORDERS

Federal Laws

American Indian Religious Freedom Act of 1978 (Public Law [PL] 95-341; 42 USC §1196) – requires the US, where appropriate, to protect and preserve religious rights of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

Animal Damage Control Act of 1931 (7 USC §426 et seq.) – provides broad authority for investigation, demonstrations and control of mammalian predators, rodents and birds.

Anti-Deficiency Act of 1982 (31 USC §1341 et seq.) – provides that no federal official or employee may obligate the government for the expenditure of funds before funds have been authorized and appropriated by Congress for that purpose.

American Antiquities Act of 1906 (PL 59-209; 16 USC §431-433) – authorizes the President to designate historic and natural resources of national significance, located on federal lands, as National Monuments for the purpose of protecting items of archeological significance.

Archeological and Historical Preservation Act of 1974 (PL 95-96; 16 USC §469 et seq.) – provides for the preservation of historical and archeological data, including relics and specimens, threatened by federally funded or assisted construction projects.

Archeological Resources Protection Act of 1979 (16 USC §470 et seq.) – prohibits the excavation or removal from federal or Indian lands any archeological resources without a permit.

Bald Eagle Protection Act of 1940 (PL 87-884; 16 USC §668a-d) – prohibits the taking or harming (i.e. harassment, sale, or transportation) of bald eagles or golden eagles, including their eggs, nests, or young, without appropriate permit.

Clean Air Act of 1970 (42 USC §7401 et seq.) – regulates air emissions from stationary, area, and mobile sources. This law authorizes the US EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment.

Clean Water Act of 1972 (PL 92-500; 33 USC §1251 et seq.) – aims to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Under Section 401, states have authority to review federal permits that may result in a discharge to wetlands or water bodies under state jurisdiction. Under section 404, a program is established to regulate the discharge of dredged or fill material into the Nation's waters, including wetlands.

Coastal Zone Management Act of 1972 (PL 92-583; 16 USC §1451 et seq.) – provides incentives for coastal states to develop coastal zone management programs. Federal actions that impact the coastal zone must be consistent to the maximum extent practicable with the state program.

Conservation and Rehabilitation Program on Military and Public Lands (PL 93-452; 16 USC §670 et seq.) – provides for fish and wildlife habitat improvements, range rehabilitation, and control of off-road vehicles on federal lands.

Conservation Programs on Military Reservations (PL 90-465; 16 USC §670 et seq.) – Requires each military department to manage natural resources and to ensure that services are provided which are necessary for management of fish and wildlife resources on each installation; to provide their personnel with professional training in fish and wildlife management; and to give priority to contracting work with federal and state agencies that have responsibility for conservation or management of fish and wildlife. In addition it

authorizes cooperative agreements (with states, local governments, non-governmental organizations, and individuals) which call for each party to provide matching funds or services to carry out natural resources projects or initiatives.

Endangered Species Act of 1973, as amended (16 USC §1531 et seq.) – provides for the identification and protection of threatened and endangered plants and animals, including their critical habitats. Requires federal agencies to conserve threatened and endangered species and cooperate with state and local authorities to resolve water resources issues in concert with the conservation of threatened and endangered species. This law establishes a consultation process involving federal agencies to facilitate avoidance of agency action that would adversely affect species or habitat. Further, it prohibits all persons subject to US jurisdiction from taking, including any harm or harassment, endangered species.

Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (PL 92-516; 7 USC §136 et seq.) – governs the use and application of pesticides in natural resource management programs. This law provides the principal means for preventing environmental pollution from pesticides through product registration and applicator certification.

Federal Land Use Policy and Management Act of 1976 (43 USC §1701) – establishes public land policy and guidelines for its administration and provides for the management, protection, development, and enhancement of the public lands.

Federal Noxious Weed Act of 1974 (PL 93-629; 7 USC §2801) – provides for the control and eradication of noxious weeds and their regulation in interstate and foreign commerce.

Fish and Wildlife Conservation Act of 1980 (PL 96-366; 16 USC §2901 et seq.) – encourages management of non-game species and provides for conservation, protection, restoration, and propagation of certain species, including migratory birds threatened with extinction.

Fish and Wildlife Coordination Act of 1934 (16 USC §661 et seq.) – provides a mechanism for wildlife conservation to receive equal consideration and coordinate with water-resource development programs.

Land and Water Conservation Act of 1965 (16 USC §4601 et seq.) – assists in preserving, developing, and assuring accessibility to outdoor recreation resources.

Migratory Bird Conservation Act of 1929 (16 USC §715 et seq.) – establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds.

Migratory Bird Treaty Act of 1918 (PL 65-186; 16 USC §703 et seq.) – provides for regulations to control taking of migratory birds, their nests, eggs, parts, or products without the appropriate permit and provides enforcement authority and penalties for violations.

National Environmental Policy Act of 1969 (PL 91-190; 42 USC §4321 et seq.) – mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. In addition it mandates preparation of comprehensive environmental impact statements where proposed action is “major” and significantly affects the quality of the human environment.

Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 25 USC §§3001-3013) – addresses the recovery, treatment, and repatriation of Native American and Native Hawaiian cultural items by federal agencies and museums. It includes provisions for data gathering, reporting, consultation, and issuance of permits.

Resource Conservation and Recovery Act of 1976 (42 USC §6901 et seq.) – establishes a comprehensive program which manages solid and hazardous waste. Subtitle C, Hazardous Waste Management, sets up a framework for managing hazardous waste from its initial

generation to its final disposal. Waste pesticides and equipment/containers contaminated by pesticides are included under hazardous waste management requirements.

Sikes Act Improvement Act of 1997 (PL 105-85; 16 USC §670a et seq.) – amends the Sikes Act of 1960 to mandate the development of an INRMP through cooperation with the Department of the Interior (through the USFWS), DoD, and each state fish and wildlife agency for each military installation supporting natural resources.

Soil Conservation Act of 1935 (16 USC §590a et seq.) – provides for soil conservation practices on federal lands.

Federal Regulations

40 CFR 1500-1508 – CEQ Regulations on Implementing NEPA Procedures
40 CFR 6 – US EPA Regulations on Implementation of NEPA Procedures
40 CFR 162 – US EPA Regulations on Insecticide, Fungicide, and Rodenticide Use
15 CFR 930 – Federal Consistency with Approved Coastal Management Programs
50 CFR 17 – USFWS list of Endangered and Threatened Wildlife
50 CFR 10.13 – List of Migratory Birds
32 CFR 190 – Natural Resources Management Program

Federal Executive Orders (EOs)

Environmental Safeguard for Activities for Animal Damage Control on Federal Lands (EO 11870) – restricts the use of chemical toxicants for mammal and bird control.

Exotic and Invasive Species (EO 13112) – 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.

Exotic Organisms (EO 11987) – restricts federal agencies in the use of exotic plant species in any landscape and erosion control measures.

Energy Efficiencies and Water Conservation at Federal Facilities (EO 12902) – federal agency use of energy and water resources is directed towards the goals of increased conservation and efficiency.

Environmental Justice (EO 12898) – 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.

Facilitation of Cooperative Conservation (EO 13352) – 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.

Facilitation of Hunting Heritage and Wildlife Conservation (EO 13443) – 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 the USDA, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Federal Compliance with Pollution Control Standards (EO 12088) – 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 US EPA authority to conduct reviews and inspections to monitor federal facility compliance with pollution control standards.

Floodplain Management (EO 11988) – specifies that agencies shall encourage and provide appropriate guidance to applicant to evaluate the effects of their proposals in floodplains prior to submitting applications. This includes wetlands that are within the 100-year floodplain and especially discourages filling.

Off-Road Vehicles on Public Lands (EO 11989) – The respective agency shall determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, immediately close such areas or trails to the type of off-road vehicle causing such effects, until such time as he determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence.

Protection of Children from Environmental health and Safety Risks (EO 13045) – 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.

Greening the Government through Leadership in Environmental Management (EO 13148) – requires the head of each federal agency to be responsible for ensuring that all necessary actions are taken to integrate environmental accountability into agency day-to-day decision making and long-term planning processes across all agency missions, activities, and functions.

Indian Sacred Sites (EO 13007) – provides for the protection of and access to Indian sacred sites.

Invasive Species (EO 13112) – directs federal agencies 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.

Protection and Enhancement of Environmental Quality (EO 11514) – provides for environmental protection of federal lands and enforces requirements of NEPA.

Protection of Wetlands (EO 11990) – directs all federal agencies to take action to minimize the destruction loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. This applies to the acquisition, management, and disposal of federal lands and facilities; to construction or improvements undertaken, financed, or assisted by the federal government; and to the conduct of federal activities and programs which affect land use.

Responsibilities of Federal Entities to Protect Migratory Birds (EO 13186) – directs all federal agencies taking actions that have a potential to negatively affect migratory bird populations to develop and implement a MOU with the USFWS by January 2003 that shall promote the conservation of migratory bird populations.

DoDI, AFI, & Air Force Pamphlets (AFPAM)

DoDI 4715.03 – Natural Resources Conservation Program
DoDI 4165.57 – Air Installations Compatible Use Zones
DoDI 4150.07 – Pest Management Program
DoDI 6055.06 – Fire and Emergency Services Program
AFI 32-7064 – Integrated Natural Resources Management
AFI 32-1053 – Integrated Pest Management Program
AFI 32-7062 – Air Force Comprehensive Planning
AFI 32-7065 – Cultural Resources Management
AFPAM 91-212 – BASH Techniques

Department of Defense Memoranda

Memorandum, Assistant DUSD (Environment, Safety and Occupational Health), 20 Sept 11, Subject: *Interim Policy on Management of White Nose Syndrome in Bats.*

Memorandum, Assistant DUSD (Environment, Safety and Occupational Health), 3 Apr 07, Subject: *Guidance to Implement the Memorandum of Understanding to Promote the Conservation of Migratory Birds.*

Memorandum, Assistant DUSD (Environment, Safety and Occupational Health), 14 Aug 06, Subject: *Integrated Natural Resource Management Plan (INRMP) Template*

Memorandum, Assistant DUSD (Environment, Safety and Occupational Health), 17 May 05, Subject: *Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning Leased Lands*

Memorandum, Assistant DUSD (Environment, Safety and Occupational Health), 1 Nov 04, Subject: *Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews*

Memorandum, DUSD (Installations and Environment), 10 Oct 02, Subject: *Implementation of Sikes Act Improvement Act: Updated Guidance*

Memorandum, Assistant DUSD (Environment), 5 Aug 02, Subject: *Access to Outdoor Recreation Programs on Military Installations for Persons with Disabilities.*

Memorandum, Assistant Secretary of Army (Environment, Safety and Occupational Health), Deputy Assistant Secretary of the Navy (Environment), Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health), 20 Sep 11, Subject: *Interim Policy on Management of White Nose Syndrome in Bats.*