United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
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May 14, 2007

Colonel Richard J. Gallant
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Service Consultation Code:	41420-2007-F-0675
Date Received:	April 4, 2007
Formal Consultation Initiation Date:	April 4, 2007
Project:	Multiple Launch Rocket System Expanded Training Use Areas at Avon Park Air Force Range
Counties:	Highlands and Polk

Dear Colonel Gallant:

This document transmits the modification of the Fish and Wildlife Service's (Service) biological opinion based on our review of the Florida Army National Guard (FLARNG) proposed artillery training at Avon Park Air Force Range (APAFR), Highlands and Polk Counties, and its adverse effects on the threatened eastern indigo snake (*Drymarchon corais couperi*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). Acronyms and abbreviations used throughout this letter are outlined in Table 1.

The FLARNG proposed, in March, 2005, to expand the 3rd Battalion, 116th Field Artillery (3-116th) training and maneuver area at APAFR to enable the 3-116th to conduct battalion-level Multiple Launch Rocket System (MLRS) training, fulfilling their training requirements to become certified as combat capable and ready. Battalion level MLRS training includes section, platoon, and battery certification for a minimum of 6 weekends-per-year and one 15-day annual training exercise. The FLARNG proposes no change in the proposed action. However they are requesting a modification in the terms and conditions of the Biological Opinion (BO) issued September 22, 2005 (Service, 2005), namely, that the annual survey of tortoise burrows, within the maneuver areas (MAs), be dropped as a term/condition. Because the survey was intended to provide a measure of protection for the eastern indigo snake the Service is providing a modification of the BO relative to that species only.

The Service's view of the effects of the proposed action on other federally protected species at APAFR remains the same as the BO dated September 22, 2005.

In the March 18, 2005, draft Environmental Assessment (EA), the FLARNG provided a determination of "no affect" for all federally protected animal species except the eastern indigo snake, for which a determination of "may affect, but is not likely to adversely affect", was made. In a letter to the Service dated July 28, 2005, the FLARNG modified their determination for the snake to "may adversely affect" and requested initiation of formal consultation. The FLARNG also made determinations of "no affect, or is not likely to adversely affect" for pigeon wings (*Clitoria fragrans*) and "no affect" for wireweed (*Polygonella basiramia*). They modified their "no effect" determinations to "no effect, or is not likely to adversely affect" for the red-cockaded woodpecker (*Picoides borealis*), the Florida scrub-jay (*Aphelocoma coerulescens*), and the Florida grasshopper sparrow (*Ammodramus savannarum floridanus*). They maintained their "no effect" determinations for the Everglade snail kite (*Rostrhamus sociabilis plumbeus*), the sand skink (*Neoseps reynoldsi*), the bluetail mole skink (*Eumeces egregious lividus*), the Highlands tiger beetle (*Cicindela highlandensis*), the wood stork (*Mycteria americana*), the Audubon's crested caracara (*Caracara cheriway*), the bald eagle (*Haliaeetus leucocephalus*), and the Florida panther (*Puma concolor coryi*).

In the original BO (Service 2005) the Service concurred with the determinations made by FLARNG and anticipated that a total take of six eastern indigo snakes would result from the proposed action. A detailed consultation history prior to September 22, 2005, is provided in the original BO (Service 2005).

No MLRS maneuvers have been performed in the time period between September 2005 and the present.

During the period of December 2006 through February 2007 a survey was conducted for gopher tortoise burrows in MA 3 (Ashton 2007). This survey found approximately 152 burrows in 133 acres or about 1.1 burrows per acre. The burrows are randomly distributed throughout the maneuver area rather than clustered in pods (Figure 1).

The terms and conditions of the September 22, 2005, BO called for annual surveys to identify and mark all gopher tortoise burrows within all MAs. MLRS vehicles would be required to avoid all burrows, thereby protecting indigo snakes from being trapped in burrows. FLARNG submitted a letter on April 4, 2007 requesting the requirement to survey and mark all tortoise burrows be removed as a term/condition of the Biological Opinion. This request was generated due to several factors. First, the expense of tortoise burrow surveys far exceeded the expected cost. The cost of the survey for MA 3 (the smallest of the six MAs) was approximately 23,000 dollars. Second, the number of tortoise burrows and their random distribution within the MAs makes avoidance of burrows by MLRS vehicles extremely impractical if not impossible. Third, 15 day annual training exercise (the main MLRS activity) will take place during August, when indigo snakes are most active and less likely to utilize tortoise burrows.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

Proposed Action

The proposed action is to expand the 3-116th training and maneuver area at APAFR to enable the 3-116th to conduct battalion-level MLRS training, fulfilling their training requirements to become certified as combat capable and ready. Battalion level MLRS training includes section, platoon, and battery certification for a minimum of 6 weekends-per-year and one 15-day annual training exercise. The 15 day annual training will be conducted during August. This would require one to four MAs per weekend training exercise, which would be used simultaneously.

Battalion Training and Certification

The training events described below include spatial and temporal requirements common to all comprehensive battalion training actions.

Section Training

The first type of event is a section certification and occurs over the course of 2 weekends. This certification requires use of a training area for static tasks such as donning chemical protection gear, first aid, radio use and protocol, land navigation, and weapons maintenance. This certification requires a separate MA (Table 2). A total of 18 sections will be rotated through the MAs for training. Each section may occupy a different MA or multiple sections may use a single MA. The personnel and equipment used during a typical section training weekend is shown in Table 3. Section training can occur any time of year.

Platoon Training

The second type of event is a platoon certification and is accomplished over the course of 2 weekends (Table 2). This event requires the entire battalion to be in the field. Each battery would generally occupy a different MA. Typically, they would travel to the MA early Saturday morning, perform their training in the afternoon or late evening, and then move to a different MA. Two platoons in a battery may move together, but it is more typical to move one platoon at a time. The units move to a rally point and then move together as a platoon. Next, they go to a release point within the MA and then move to their own operational area. The personnel and equipment used during a typical training weekend for platoon certification is shown in Table 3. Platoon training can occur any time of year.

Annual Training

The third type of training event is the 15-day annual training (Table 2). During this event, the entire battalion remains in the field conducting maneuver training. The battalion maneuvers through the training area and is presented with different training scenarios. Consequently, the battalion needs an additional area large enough to hold three firing batteries through which to rotate the battalion. During the maneuver training, each battery is positioned individually to fire

reduced range practice rockets (RRPR) during a strictly controlled live fire exercise. Annual training requires four MAs for training of the battalion plus a live fire area and a corresponding impact area for RRPR. The annual battalion training will be conducted in August.

Battery Training

The fourth type of training event is battery training. After the annual training in which each battery is evaluated, the evaluators, along with the battery commander and the battalion commander, may determine that his battery is insufficiently prepared for deployment to combat.

Each battery commander may then potentially need 2 weekends to retrain his soldiers to the proper standard (Table 2). The personnel and equipment used during a typical training weekend for platoon certification is shown in Table 3. Battery training could occur any time of year. The amount of retraining each battery needs is at the discretion of the battery commander. If retraining were to occur at the same time, the four batteries would need a maximum of four MAs per weekend. However, depending on the retraining needs, they could need from one to four MAs.

Multiple Launch Rocket System Operations

The FLARNG would use existing maneuver points during training exercises. These points are not adequate for the launchers but they could be used for wheeled vehicles. During the 15-day annual training, each of the three firing batteries would conduct a highly controlled live fire with RRPRs. Live fire would occur over an approximately 72-hour period, with 4 hours needed per section. Each section would rotate to firing point A-6 on the main airfield (Figure 2) at different times and would fire three rounds for a total of 54 rounds into the approved high explosive (HE) impact area on Bravo Range. The rounds are non-energetic once they have expended their propellant with the exception of a smoke marking charge. The section would return to the hide area within the MA once the rocket firing was completed. This rotation would continue over a 3-day period until all sections completed their live fire training.

Six MA sites will be utilized for battalion maneuver training (Table 4). Any of the six MAs would be individually or collectively scheduled and used during a given training exercise. The FLARNG would provide a preliminary training schedule for the year in advance, and would coordinate the scheduling with APAFR for the 6 weekends and one 15-day annual training event. Regardless of the number of MAs scheduled per month, the MLRS battalion would only schedule training areas at APAFR for 1 weekend per month. The MLRS vehicles will use existing roads and tank trails approximately 75 to 90 percent of the time and travel off-road approximately 10 to 25 percent of the time when executing “hide,” “load,” and “firing” exercises.

Protective measures:

FLARNG will use the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2004) while moving all vehicles to and from maneuvering areas. These movements will be confined to established tank trails or roads and maximum speeds will not exceed 25 miles per hour. These protective measures may minimize impacts to snakes while on established trails and roads however they will provide only minimal protection while maneuvering off-road within the MAs.

MLRS vehicles will not be operated in wetlands within the MAs. 339 acres of wetlands have been posted with signs and will be avoided by MLRS vehicles at all times of year. The wetland acreages are shown on Table Four. This will provide only partial protection for eastern indigo snake since the species is wide ranging and occurs in virtually all habitats on APAFR except deep water aquatic systems.

The FLARNG has completed a tortoise burrow survey for MA 3 and has voluntarily agreed additional baseline surveys in remaining MAs. These surveys will permit identification and possible avoidance of some potential eastern indigo snake shelters by MLRS vehicles during the 2007 maneuvers. Because the eastern indigo snake will be active above ground during the training exercises and because eastern indigo snake utilize a variety of underground shelters besides tortoise burrows this will provide only partial protection for the species.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Service has determined that the action area for the proposed project is the 2,566 acres which comprises the six MAs at APAFR (Figure 2). In addition, because tracked and other vehicles will be traveling to and from MAs, the area of the tank trails and roads could potentially be affected by the project.

STATUS OF THE SPECIES AND CRITICAL HABITAT RANGEWIDE

Species/Critical Habitat Description

The eastern indigo snake is the largest non-venomous snake in North America, obtaining lengths of up to 8.5 feet (2.6 meters) (Moler 1992). Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes the cheeks. Its scales are large and smooth (the central 3 to 5 scale rows are lightly keeled in adult males) in 17 scale rows at mid-body. Its anal plate is undivided.

The eastern indigo snake was listed as threatened on January 31, 1978, (Service 1978) due to population declines caused by habitat loss, over-collecting for the domestic and international pet trade, and mortality caused by rattlesnake collectors who gas gopher tortoise burrows to collect snakes.

The recovery plan was prepared for eastern indigo snake in 1982 (Service 1982). Tasks identified in the recovery plan include: habitat management through controlled burning, testing

experimental miniature radio transmitters for tracking juveniles, maintenance of a captive breeding colony at Auburn University, recapture of formerly released snakes to confirm survival in the wild, educational lectures and field trips, and efforts to obtain landowner cooperation in conservation efforts (Service 1999).

The indigo snake ranges from the southeastern United States to northern Argentina (Conant and Collins 1998). This species has eight recognized subspecies, two of which occur in the United States: the eastern indigo and the Texas indigo (*D. c. erebennus*). The eastern indigo occurs throughout most of Florida and is absent only from the Dry Tortugas and Marquesas Keys and regions of north Florida where cold temperatures and deeper clay soils exist (Cox and Kautz 2000).

Critical Habitat

Critical habitat has not been designated for this species. Therefore, none will be affected.

Life History

In northern Florida, eastern indigo snakes breed between November and April, with females depositing 4 to 12 eggs during May or June (Moler 1992). Young hatch in approximately 3 months and there is no evidence of parental care. Limited information on the reproductive cycle in south-central Florida suggests that the breeding and egg-laying season may be extended. In this region, breeding extends from June to January; egg-laying occurs from April to July; and hatching occurs during mid-summer to early fall (Layne and Steiner 1996). Snakes in captivity take 3 to 4 years to reach sexual maturity (Speake et al. 1987). Female eastern indigo snakes can store sperm and delay fertilization of eggs. There is no information on the eastern indigo snake lifespan in the wild, although one captive individual lived 25 years, 11 months (Shaw 1959).

The eastern indigo snake is a generalized predator and will eat any vertebrate small enough to be overpowered. Indigo snakes tend to favor the edges of wetlands for hunting (Moler 1992). Food items include fish, frogs, toads, snakes (venomous, as well as non-venomous), lizards, turtles, turtle eggs, small alligators, birds, and small mammals (Keegan 1944; Babis 1949; Kochman 1978; Steiner et al. 1983).

Eastern indigo snakes require a mosaic of habitats. A study in southern Georgia found that interspersion of tortoise-inhabited sandhills and wetlands improve habitat quality for the snake (Landers and Speake 1980). Eastern indigo snakes require sheltered retreats from winter cold and desiccating conditions, and often use burrows of the gopher tortoise (*Gopherus polyphemus*) (Speake et al. 1978, Layne and Steiner 1996). Eastern indigo snakes also take shelter in hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs (Lawler 1977, Moler 1985a, Layne and Steiner 1996). Over most of its range in Florida, the eastern indigo snake frequents diverse habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities (Service 1999). Eastern indigos also use agricultural lands and various types of wetlands, with higher population

concentrations occurring in the sandhill and pineland regions of northern and central Florida. In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes are found in tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats (Steiner et al. 1983). It is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner et al. 1983).

Indigo snakes range over large areas and into various habitats throughout the year, with most activity occurring in the summer and fall (Smith 1987, Moler 1985a). In Georgia, the average range of the eastern indigo is 12 acres during the winter (December through April), 106 acres during late spring/early summer (May through July), and 241 acres during late summer and fall (August through November) (Speake et al. 1978). Adult males have larger home ranges than adult females and juveniles; their ranges average 554 acres, reducing to 390 acres in the summer (Moler 1985b). In contrast, a gravid female may use from 3.5 to 106 acres (Smith 1987). At the Archbold Biological Station, average home range size for females was determined to be 47 acres and overlapping male home ranges to be 185 acres (Layne and Steiner 1996).

Large expanses of land are required to protect and manage this species for recovery. Management of these lands must be directed towards maintaining and enhancing the diversity of plant and animal assemblages within these properties. Where these goals are achieved, eastern indigo snakes will directly benefit because of improved habitat conditions. Land managers are encouraged to utilize fire as a tool to maintain biodiversity in fire dependent ecosystems.

Status and Distribution

In the United States, the eastern indigo snake historically occurred throughout Florida and in the coastal plain of Georgia and has been recorded in Alabama and Mississippi (Diemer and Speake 1983, Moler 1985b). Georgia and Florida support the remaining endemic populations of the eastern indigo snake (Lawler 1977).

Effective law enforcement has reduced pressure on the species from the pet trade. However, because of its relatively large home range, this snake is especially vulnerable to habitat loss, degradation, and fragmentation (Lawler 1977; Moler 1985a). The primary threat to the eastern indigo snake is habitat loss due to development and fragmentation. In wildland urban interface areas, residential housing is also a threat because it increases the likelihood of snakes being killed by property owners and domestic pets. Extensive tracts of undeveloped land are important for maintaining eastern indigo snakes.

ENVIRONMENTAL BASELINE

Status of the Species within the Action Area

Approximately 50,000 acres of upland habitat at APAFR provide potential habitat for the threatened eastern indigo snake (Legare and Breininger 2002). A study of the distribution of the eastern indigo snake at APAFR showed it to be widespread in a variety of habitats including oak (*Quercus* spp.) scrub, pine plantations, oak hammock, pine flatwoods, sand pine scrub, dry prairie, hardwood swamp, and disturbed areas (Franz et al. 1998).

Indigo snakes have been documented in or around MA-1, MA-2, MA-3, and MA-4 (Figure 1). Most sightings occur along roads, which is likely because they are more easily detected when on roads. Legare and Breininger (2002) provided mean home range estimates of 457 acres for males and 247 acres for females on APAFR. Because indigo snakes use a variety of habitats and have very large home ranges, indigo snakes likely occur throughout APAFR.

Management of the indigo snake is through general management and maintenance of the habitat, and by implementing the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2004).

Past and ongoing Federal actions affecting the indigo snake within the action area include two recent actions the Service has formally consulted on regarding training exercises at APAFR. A biological opinion was issued in October 2006 for the Joint Integrated Fires Exercise at APAFR and incidental take was estimated to be 14.6 snakes per year or 29.2 snakes annually. A biological opinion was issued on June 7, 2005 for the Air-to-ground Bombing exercise at APAFR and incidental take was anticipated not to exceed 11 snakes annually.

Factors Affecting Species Environment within the Action Area

APAFR is currently in consultation under section 7 of the Act with the Service on the draft update to the existing Integrated Natural Resources Management Plan. Ongoing activities which may affect eastern indigo snake include cattle grazing, other military training, timber management, recreation, controlled burns, prison operations, and ongoing maintenance of existing infrastructure.

EFFECTS OF THE ACTION

Eastern indigo snakes use a variety of habitats and underground shelters and have large home ranges at APAFR (Navy 2005). The survey of tortoise burrows in MA 3 by Ashton (2007) indicates that indigo snakes have a large number of potential shelters available to them. Ashton detected 152 tortoise burrows in 133 acres of MA 3 (about 1.1 burrows per acre) distributed in a random, non-clumped, manner. Not included in this count were other miscellaneous shelters, such armadillo dens and cavities formed by uprooted trees. Ashton (2007) also documented three indigo snake sheds in MA 3. Therefore it is likely that indigo snakes occur in the MAs and along the roads and trails. The potential exists for disturbance or harm to individual indigo snakes within the MAs and along the roads and trails due to tracked vehicle use during the training maneuvers. Potential impacts to indigo snakes from tracked vehicle use include injury, underground entrapment, or direct mortality due to maneuvers within the MAs, injury or mortality on access roads by vehicles under the proposed action, and disturbance, fragmentation, or destruction of habitat within the MAs.

Direct and Indirect Effects

The proposed action could impact 2,566 acres of potential indigo snake habitat over a period of years, primarily through operation of tracked vehicles within the six proposed MAs. Legare and Breininger (2002) estimated that approximately 50,000 acres of upland habitat at APAFR provide potential habitat for the indigo snake. Based on a home range of 457 acres for male and 247 acres for female indigo snakes, the Service estimates that a minimum of 5.6 male and 10.4 female snakes, representing approximately 5.1 percent of the potential population of indigo snakes at APAFR, may occur on the MAs. This estimate assumes that all potential habitats are occupied; that male and female snake home ranges are exclusive of other male and female snake home ranges, respectively; but that female and male snake home ranges do overlap. These assumptions have not been tested. It is possible that the actual number of snakes within the MAs and across the APAFR landscape may be higher or lower than the Service's estimate. The number of snakes expected to be present on the roads and trails is not known and would vary over time and space.

An individual MA may contain a single snake home range or may overlap with several snake home ranges, depending on the distribution and configuration of snake home ranges and the location, configuration, and size of the MAs. We have estimated that 16 snakes (male and female) may be present within the action area; however, it is difficult to determine how many snakes will be present within each MA. The MAs vary in size from 133 acres to 657 acres, with the average size of 428 acres. As stated earlier, mean home range size for indigo snakes at APAFR has been estimated at 457 acres for males and 247 acres for females. Though not all available habitats will necessarily be occupied, it is reasonable to expect that an individual MA would support all or portions of one to three snake home ranges.

Snakes may be injured or killed above ground by tracked vehicles. This effect is more likely to occur in summer when indigo snakes are active above ground and less likely in winter when snake tend to seek shelter underground from cold weather. Some snakes may be trapped in underground by MLRS vehicle activity. This is unavoidable since underground shelters are numerous and randomly distributed, as shown by Ashton's survey of MA 3 (2007) (see Figure 1). The training activity may cause individuals to leave the area, abandon den sites, and possibly miss foraging and mating opportunities. Individual snakes fleeing the area may be more vulnerable to predation.

It is anticipated 2,566 acres of indigo snake habitat (2.4 percent of the total acreage of APAFR) may be impacted by the proposed action. Some vegetation cover will be crushed by vehicle use and indigo snake shelters (tortoise burrows, root holes, armadillo dens, etc.) will be lost from vehicle off-road activity during each training exercise. The proposed action could result in long term degradation of habitat quality and habitat fragmentation within MAs. Depending on the timing and the amount of off road use by MLRS vehicles vegetation may be crushed and die out creating patches of open barren soil, making the areas less suitable for indigo snakes.

Based on the proposed level of use of the six MAs, the Service anticipates the proposed action may result in the take of 1.3 indigo snakes/year/MA, or a total of eight snakes annually. This represents an increase in two snakes per year over the take anticipated in the September 22, 2005

BO. The incidental take is expected to be in the form of harm, harassment, and direct mortality. Snakes may be injured or killed during the training exercise by tracked vehicles. This activity may cause individuals to leave the area, abandon den sites, and possibly miss foraging and mating opportunities. Unoccupied above ground and below ground shelters may be lost during the training exercises. Individual snakes fleeing the area may be more vulnerable to predation. Some snakes may be trapped in underground shelters. Long-term detrimental impacts to habitat may occur.

Interrelated and Interdependent Actions

There are no known interrelated or interdependent actions related to the proposed action.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. There are no known cumulative effects expected form the proposed action.

SUMMARY OF EFFECTS

MLRS vehicle may cause direct mortality to snakes on maintained access roads. The off road use of the MAs could result in direct loss of eastern indigo snakes due to direct mortality and entrapment in underground shelters by MLRS activity. Individual snakes may leave MAs, abandon den sites, and possibly miss foraging and mating opportunities. Above and below ground shelters may be lost during the training exercises. Individual snakes fleeing the area may be more vulnerable to predation. Long term degradation or fragmentation of habitat could result from periodic off road use of MAs.

CONCLUSION

After reviewing the status of the eastern indigo snake, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the modification of the proposed action, is not likely to jeopardize the continued existence of the eastern indigo snake. No critical habitat has been designated for indigo snake; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Sections 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which

include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the FLARNG so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in action 7(o)(2) to apply. The FLARNG has a continuing duty to regulate the activity covered by this incidental take statement. If FLARNG (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, FLARNG must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement.

AMOUNT OR EXTENT OF TAKE

The Service anticipates incidental take of eastern indigo snake will be difficult to detect for the following reasons: indigo snakes are wide-ranging; finding a dead or impaired specimen is unlikely; losses may be masked by other causes; and indigo snakes occupy underground shelters (tortoise burrows, root holes, armadillo dens, etc.) making detection difficult. However, based on the proposed level of use of the six MAs, the Service anticipates the proposed action may result in the take of 1.3 indigo snakes/year/MA, or a total of eight snakes annually. This represents an increase in two snakes per year over the take anticipated in the BO dated September 22, 2005. The incidental take is expected to be in the form of harm, harassment, and direct mortality.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of the eastern indigo snake.

FLARNG will educate trainees regarding the presence of indigo snakes and avoid the snakes and their shelters whenever possible.

FLARNG will monitor the long term effect of the training on indigo snakes and their habitat within the MAs.

The FLARNG will work with APAFR's staff to coordinate their operational training schedules to the greatest extent practical to minimize potential adverse effects on natural resource compliance, management, and monitoring requirements.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the ESA, the FLARNG must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

(1) Vehicle and equipment operators will be notified to avoid all snakes. Tortoise burrows will be avoided to the extent possible given mission capabilities and vegetation cover conditions. Training units will be educated to recognize the eastern indigo snake. If any snake is encountered, it will be avoided or allowed to leave the area on its own before vehicle or equipment use is resumed;

(2) Representatives of FLARNG and the Service will perform an on-site inspection of the MAs no later than two weeks after completion of training exercise. Representatives of APAFR and Fish and Wildlife Commission (FWC) will be invited but their participation will be voluntary. The inspection will focus on the impact of tracked vehicles on the habitat of eastern indigo snake, in particular, the effects on tortoise burrows and other potential indigo snake shelters. The FLARNG will submit annual monitoring reports on the effects of training activities, and shall document the date(s) and duration of the activities, and the effects to the eastern indigo snake and their habitat. The report shall also summarize monitoring of the post-action response of species and document any species sightings, including locations of sightings. Reports shall be submitted no later than September 30 each year for the life of the proposed action; and

(3) Upon locating a dead, injured, or sick individual of a federally listed species, initial notification must be made to the nearest Service Law Enforcement Office (Fish and Wildlife Service; 9549 Koger Boulevard, Suite 111; St. Petersburg, Florida 33702; 727-570-5398). Secondary notification should be made to the Florida Fish and Wildlife Conservation Commission, South Region; 3900 Drane Field Road; Lakeland, Florida 33811-1299; 800-282-8002. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured specimens or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The FLARNG must immediately provide an

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The FLARNG should consider repeating the baseline survey for gopher tortoise burrows periodically to gain insight into the effects of the maneuvers on gopher tortoise and eastern indigo snake habitat.

The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the reinitiation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Mark Fredlake at 863-452-4164.

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc:
APAFR, Avon Park, Florida (Paul Ebersbach, Vicki Davis)
FLARNG, St. Augustine, Florida (Major Bobby Roach, Russell Robinson) electronic copy
FLARNG, Starke, Florida (Major Cecil Cauley, cecil.cauley@us.army.mil) electronic copy
FWC, Tallahassee, Florida (Hugh Boyter)

FWC, Tallahassee, Florida (Hugh Boyter)

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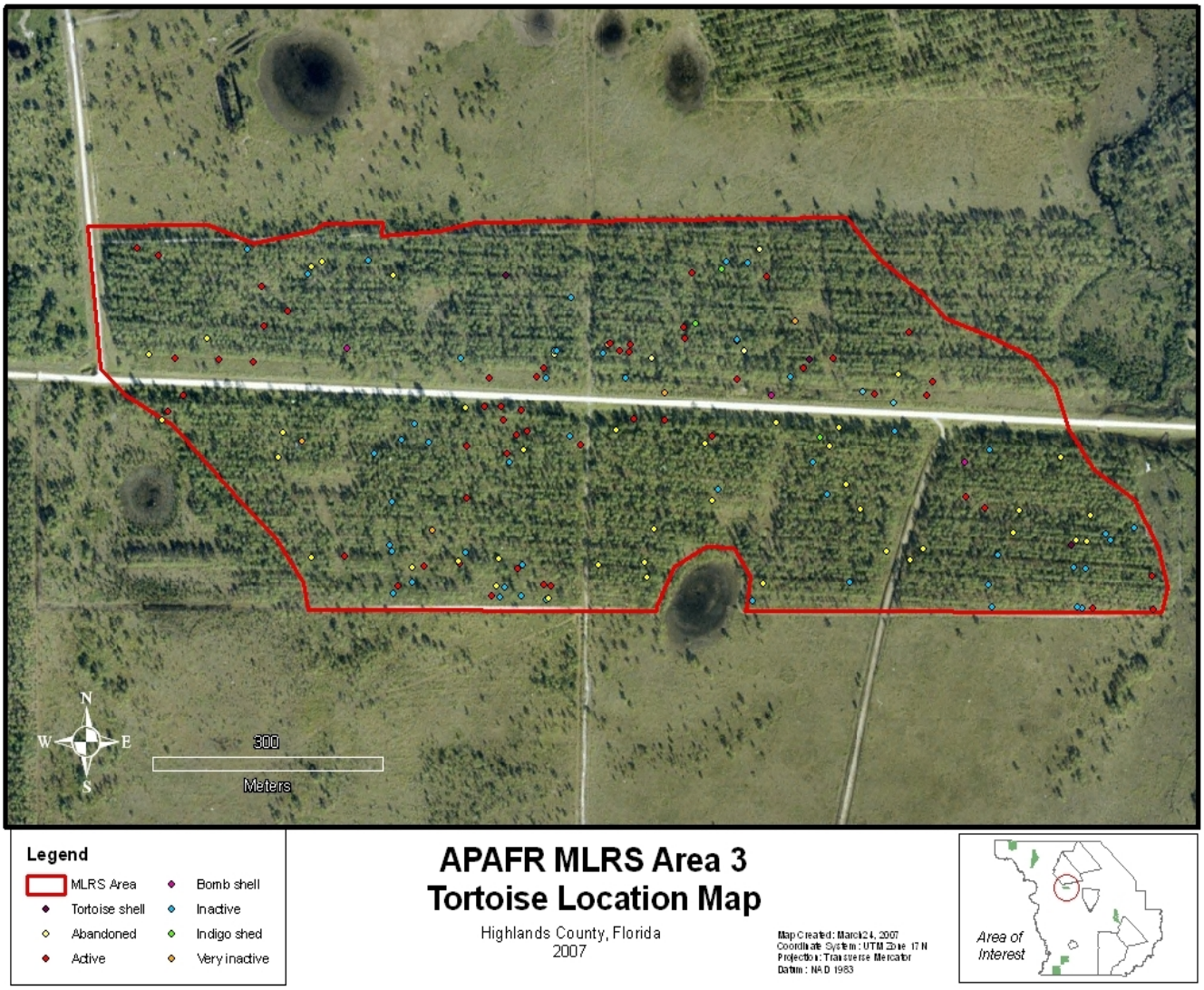

Figure 1. Locations of tortoise burrows in MA 3 from Ashton (2007).

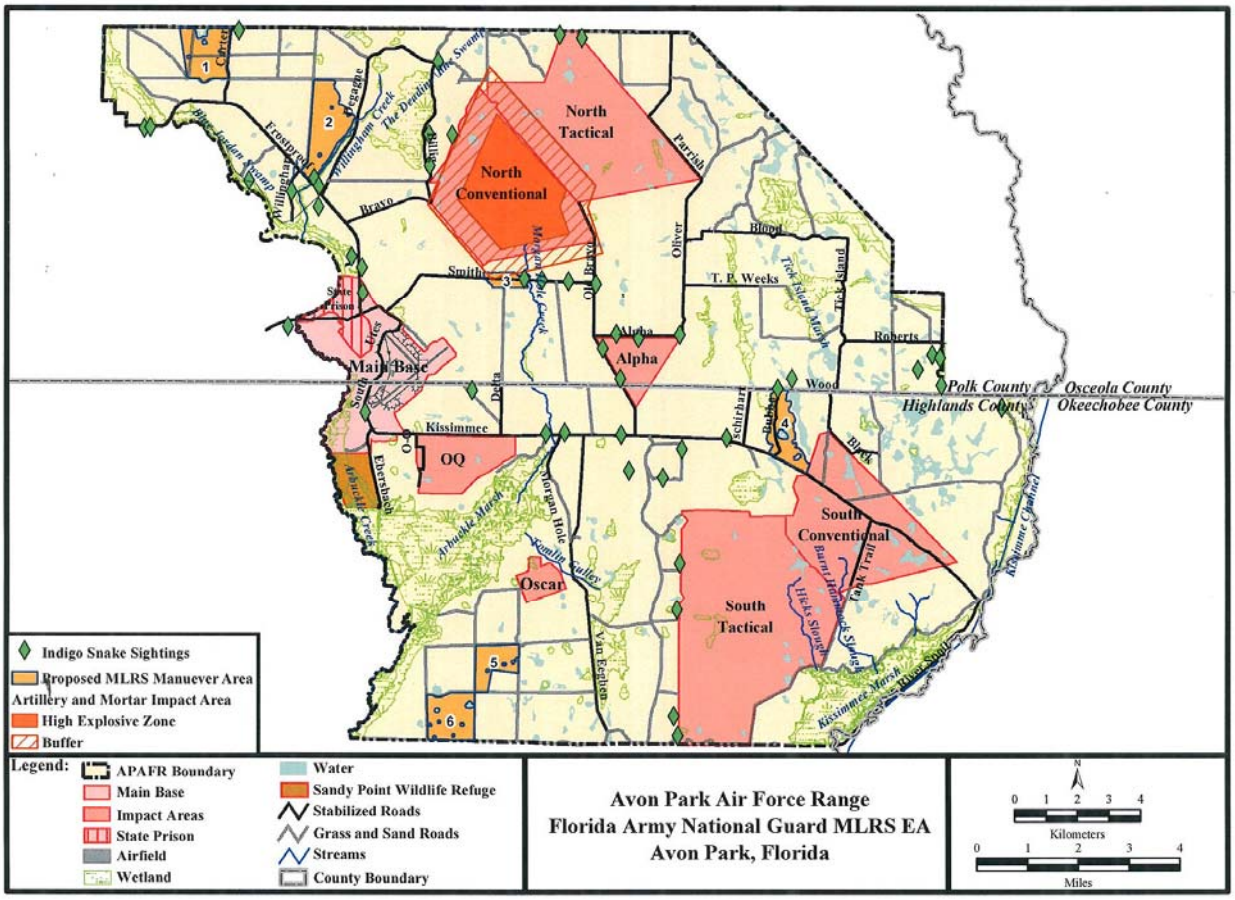

Figure 2. Location of proposed Multiple Launch Rocket Systems Maneuver Areas and documented eastern indigo snake sightings at Avon Park Air Force Range.

Table 1. Acronyms and abbreviations

Acronym/Abbreviation	Definition
APAFR	Avon Park Air Force Range
BO	Biological Opinion
EA	Environmental Assessment
ESA	Endangered Species Act of 1973, as amended
FLARNG	Florida Army National Guard
FWC	Florida Fish and Wildlife Conservation Commission
HE	High Explosive
HHSB	Headquarters and Headquarters Service Battery
MA	Maneuver Area
MLRS	Multiple Launch Rocket System
Navy	U.S. Navy
RRPR	Reduced Range Practice Rockets
Service	Fish and Wildlife Service
USAF	U.S. Air Force
3-116th	3rd Battalion, 116th Field Artillery

Table 2. Annual, temporal, and spatial training requirements per training event.

	Section Certification	Section Certification	Platoon Certification	Platoon Certification	Annual Training	Battery Training[1]	Battery Training
Field Time	24 hours	24 hours	24 hours	24 hours	10 days	24 hours	24 hours
Total Time	48 hours	48 hours	48 hours	48 hours	15 days	48 hours	48 hours
A Battery	1 MA	1 MA	1 MA	1 MA	1 MA	1 MA	1 MA
B Battery			1 MA	1 MA	1 MA	1 MA	1 MA
C Battery			1 MA	1 MA	1 MA	1 MA	1 MA
HHS Battery (HHSB)[2]			1 MA	1 MA	1 MA	1 MA	1 MA
Total	**1 MA**	**1 MA**	**4 MAs**	**4 MAs**	**4 MAs**	**1-4 MAs**	**1-4 MAs**

[1] From one to three firing batteries may train during the same weekend.
[2] The Headquarters and Headquarters Service Battery (HHSB) may locate with one of the firing batteries, using one less MA.

Table 3. Maneuver Area assets for various types of battalion training.

Vehicles (Tracked)[1]	Type of Vehicle	Section Certification[2]	Battery Training[3]	Platoon Certification	
				Battalion Resources	Battalion TOC and ALOC (HHSB)
M270 (T)	Launcher	2	6	18	
M985	Ammunition Truck		12	36	
M989	Ammunition Trailer		12	36	1
M577 (T)	Command Post Carrier	1	3	9	3
M978	Fuel Tanker		2	6	1
M97x	Wrecker			3	
M88 (T)	Recovery Vehicle			3	1
2.5 Ton Truck	Truck			9	9
5 Ton Truck	Truck			3	
HMMWV	Light Vehicle	2	4	21	22
#events/year		2	2	2	2
Personnel		9	69	273[4]	116
MAs used		1	1-4	3	1

[1] T=Tracked. If not tracked, then it is wheeled.
[2] Typically, two section would go out at a time to a single MA
[3] Resources for a single battery.
[4] Number of personnel per MA would be 91.

Table 4. Proposed battalion maneuver areas for MLRS.

Maneuver Area	Acres	Wetland Acres
1 - Big Plantation	534	124
2 - Willingham	657	17
3 - Delta	133	2
4 - Bubba	428	35
5 - Alexander	329	37
6 - Ramsey	485	124
Total	2,566	339