

Comments on the Guam Military Buildup Draft Environmental Impact Statement (DEIS)



Mariana eight spot butterfly, *Hypolimnas octocula mariannensis*, male. Image from *Butterflies of Micronesia* by Ise H. Schreiner & Donald M. Nafus, University of Guam 1997.

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Comments on Chapter 10. Terrestrial and Biological Resources

Potential Impact on the Mariana Eight Spot Butterfly, an Endangered Species Living on Route 15 Lands

[NOTE: Blue font is used wherever we quote directly from the DEIS.]

B-020-001

We are commenting on potential impacts to the Mariana eight spot butterfly, *Hypolimnas octocula mariannensis*, by construction of firing ranges in the area referred to as "Route 15 lands". This rare butterfly inhabits Guam's limestone forest habitat. It is a special-status species recognized as a candidate for listing under the federal Endangered Species Act and it is listed as a species of greatest conservation need (SOGCN) by the Government of Guam (Guam Comprehensive Wildlife Strategy 2006; available online at http://www.wildlifeactionplans.org/pdfs/action_plans/gu_action_plan.pdf). In addition to the Mariana eight spot butterfly, the Route 15 Lands contain important habitat for other endangered species: "Nine ESA-listed or candidate species have been observed or habitat is present within the Route 15 lands (Table 10.1-14, Figure 10.1-19). Limestone forests are an important habitat for these species." (DEIS-Volume 2, Chapter 10, page 10-50). Route 15 lands contain essential habitat for the Mariana fruit bat and the Micronesian kingfisher and a designated recovery zone for the Marianas crow (See DEIS Figure 10.2-11).

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Thank you for your comments. Page 2, paragraph 2: the eight-spot butterfly observed during the vegetation surveys was an incidental observation. Photos were taken and verification of the species was done by the NAVFAC Pacific entomologist, USFWS biologists, and Ilse Schreiner. Pg 2, paragraph 5 1st bullet: we acknowledge that the Chamorro term ababang is generic for all species of butterflies but have been told that it is acceptable to use this term for any species of butterfly especially since there is no Chamorro name for the specific species. 2nd bullet: according to the USFWS, the full species name of the Mariana eight-spot butterfly is *Hypolimnas octocula mariannensis* (see the species profile webpage at <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I0R7><http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I0R7> and the 2008 Species Assessment and Priority Listing Assignment Form for the Mariana eight-spot butterfly available at http://ecos.fws.gov/docs/candforms_pdf/r1/I0R7_I01.pdfhttp://ecos.fws.gov/docs/candforms_pdf/r1/I0R7_I01.pdf A decision was made to follow USFWS naming within the EIS for consistency. However, we acknowledge the misspelling of the species name in Appendix G, Chapter 2, Section 2.2, Species List, pg 2-1. Thank you for pointing this out and it has been corrected in the FEIS to octocula in accordance with USFWS naming; and the subspecific name has also be added. Pg 2, paragraph 6 1st bullet: there are numerous accepted spellings of Chamorro names and we have seen both 'ababang' and 'ababbang' used to refer to butterfly. Per your request, we have changed all to ababang. 2nd bullet: see response to the 1st bullet in previous paragraph. 3rd and 4th bullets: see response to 2nd bullet in previous paragraph. 5th bullet: Thank you for the correction. A correct picture of a Mariana eight-spot butterfly has been inserted. Pg 2, paragraph 7: *Hypolimnas octocula* is only misspelled in the table of species names and this has been corrected. In all other occurrences within the DEIS (the scientific name only occurs in Vol 9, Appendix G), the species name

According to the DEIS, data on the Mariana eight spot butterfly were collected during surveys of Route 15 lands undertaken in 2008 and 2009. Details on the 2008 surveys are in the Natural Resources Survey Report which is unpublished and unavailable. Details of the 2009 surveys are in Campora and Lee (2009) of which we have a copy.

One of us (AM) learned from personal communication with one of the biologists who participated in the 2008 survey that this was a vegetation survey and the sighting of a single adult Mariana eight spot butterfly during this survey was an accidental observation. We cannot confirm this without access to the Natural Resources Survey Report.

In contrast to the 2008 vegetation survey, the objective of the 2009 survey, performed between July 15 and July 24 by Campora and Lee, was to collect data on all life stages of the Mariana eight spot butterfly and distribution of its two documented host plants on Route 15 lands. The survey was performed along three linear transects: Route 15 North, Route 15 South, and the Pagat Cave Trail. These transects covered only a minute part of the Route 15 lands proposed for location of firing ranges for the U.S. Marines. Much of the Route 15 lands is limestone forest habitat identified as essential habitat for the Mariana fruit bat, the Micronesian kingfisher, the Marianas crow, several native plant species including the Guam-listed endangered tree, *Heretia longiprtiolata*, and the two larval host plants of the Mariana eight spot butterfly, *Elatostema calcereum* and *Procris pendunculata*. The Mariana eight spot butterfly or its immature stages were detected in all three transects.

Authors of the DEIS kindly provided a technical reference for species mentioned in the DEIS (Volume 9, Chapter 2). Unfortunately, information provided in this appendix is inaccurate and badly in need of review by competent biologists with some experience with the Guam flora and fauna. The Navy employs several experts in this area. Here are a few errors we noticed concerning the Mariana eight spot butterfly.

Volume 9, Chapter 2, Page 2.1

- "ababang" is not the Chamorro name for this species, "ababang" is simply the generic name for all butterflies
- *octicula* is misspelled; should be *octocula*

Volume 9, Chapter 2, Fact Sheet for Mariana Eight Spot Butterfly, no page number provided

- "ababbang" is misspelled; should be "ababang"
- "ababang" is not the Chamorro name for this species, "ababang" is simply the generic name for all butterflies
- *octucula* is misspelled; should be *octocula*
- *marianensis* is misspelled; should be *marianensis*
- The image is wrong. This is a photo of a *Hypolimnas bolina* female, a very common butterfly on Guam. If one reads the species description section of the fact sheet, it becomes obvious that the image is wrong.

Note: While misspelled scientific names may be regarded as inconsequential typos by some, they are not. Scientific names are intended as globally unique identifiers that allow biologists to access all known information about a taxon of interest. Since *Hypolimnas octocula* is not spelled correctly anywhere in the DEIS, this important document will not show up in digital searches for information on this endangered species. Please check and correct scientific nomenclature for all species before publishing the EIS.

is spelled correctly in accordance with the USFWS. Pg 4, General Comment #1. Although alternatives A and B for the live-fire range complex on Guam are proposed in the same general area, they would not be constructed within the same footprint nor would they require the exact same lands. Under Alternative A, all proposed live-fire ranges would be contained within the northern half of the depicted Route 15 lands in Fig 10.2-10. Under Alternative B, the machine gun range would be located further to the south in the Sasajyan area and the other ranges would be reconfigured differently in the northern area of the Route 15 lands and within Andersen South. A detailed discussion of the selection of alternatives for the proposed live-fire ranges on Guam is presented in Volume 2, Chapter 2, Sections 2.3.2.1 and 2.3.2.5, particularly Section 2.3.2.5. Due to the large safety danger zones (SDZs) that would be associated with the proposed live-fire ranges, alternatives within Andersen AFB or the Naval Magazine (or NMS) would not meet minimum safety requirements. Although Tinian is proposed for some live-fire ranges, the ranges proposed for Guam are necessary to meet initial and basic live weapons firing training requirements, and these basic training ranges need to be sited on Guam in proximity to the other basic training facilities and activities. Tinian ranges would be used for more advanced training and maneuvers. Pg 4, General Comment #2 The Natural Resources Survey Report is still in preparation. The report is expected to be available in late spring well before the publication of the Final EIS. Once the report has been prepared and reviewed by Navy biologists, a copy will be provided to all interested parties for review and comment. Pg 4, General Comment #3: The DoD carefully considered all requests to extend the length of the comment period beyond the 45-day minimum required by NEPA. In evaluating multiple options, DoD leadership determined that a 90-day comment period best balanced the need for sufficient time to review a complex document with the requirement to reach a timely decision regarding the proposed military buildup on Guam. Pgs 4 and 5, Comments on Impacts to Mariana eight-spot butterfly Comment #1: The loss of limestone forest due to the

Background Provided in the DEIS**MARIANAS EIGHT-SPOT BUTTERFLY.**

Two populations have been reported in the Pagat area of the Route 15 lands; however, the specific location was not given (Scheiner and Nafus 1996 as cited in USFWS 2007b). During December 2008 surveys at the site, one individual was observed at the southern location shown in Figure 10.1-20 (NR Survey Report in preparation). In July 2009, surveys were conducted for all life stages of the Mariana eight-spot butterfly and its two documented host plant species (*Elatostema calcareum* and *Procris pedunculata*) along three transects within the Route 15 Lands (Campora and Lee 2009). Host plants were generally sparsely distributed except for two areas which contain large groups of both plant species. One adult eight-spot butterfly was seen within one of the large host plant areas at the northern location shown in Figure 10.1-20. The previous adult eight-spot sighting in December 2008 at the southern location was within the other large host plant area. Other life stages (e.g. egg, larvae, pupae) were found on host plants in all three transects; however, without rearing these stages to the adult form they cannot be identified with complete certainty as Mariana eight-spot butterflies (Campora and Lee 2009). (DEIS-Volume 2, Chapter 10, page 10-52)

Impacts during Construction (Alternative A)

MARIANAS EIGHT-SPOT BUTTERFLY. This candidate species was observed in a mixed host plant area approximately 300 ft (91 m) from the Alternative A proposed machine gun range footprint during 2008 site-specific surveys (see Figure 10.2-11). Scattered individuals of its two host plants were also observed within the machine gun range footprint. An individual butterfly was also observed in a mixed host plant area approximately 50 ft (15 m) northeast of the proposed northern-most fence line (see Figure 10.2-11). Scattered individuals of its two host plants were also observed within the proposed fence line and access road footprints. Because only scattered host plants would be removed and the large mixed host plant areas would remain, impacts would be less than significant. (DEIS-Volume 2, Chapter 10, page 10-112).

Impacts during Operation (Alternative A)

MARIANAS EIGHT-SPOT BUTTERFLY. This candidate species was observed near the Alternative A machine gun range area during 2008 site-specific surveys (NR Survey Report in preparation). Its two host plants were also observed in that area, and in areas within the machine gun range footprint. The eight-spot butterfly is unlikely to be affected by noise and activity in nearby ranges. Impacts would be less than significant. (DEIS-Volume 2, Chapter 10, page 10-114)

Impacts during Construction (Alternative B)

MARIANAS EIGHT-SPOT BUTTERFLY. This candidate species was observed in a mixed host plant area approximately 500 ft (152 m) from the Alternative B UD range area during 2008 site-specific surveys (see Figure 10.2-13). No host plants or butterflies have been documented within or near the range footprints. Impacts would be less than significant. (DEIS-Volume 2, Chapter 10, page 10-117)

Impacts during Operation (Alternative B)

MARIANAS EIGHT-SPOT BUTTERFLY. This candidate species was observed near the Alternative B UD range area during 2008 site-specific surveys (NR Survey Report in preparation). Its two host plants were also observed in that area, and in areas within the UD range footprint. The eight-spot butterfly is unlikely to be affected by noise and activity in nearby ranges. Impacts would be less than significant. (DEIS-Volume 2, Chapter 10, page 10-120)

construction and operation of the live-fire ranges on Rte 15 Lands would not result in a significant loss of existing limestone forest on Guam when considered in the context of the total amount of limestone forest remaining on Guam. Although the construction of the proposed ranges would result in the loss of limestone forest, the operation of those ranges and the fencing of the associated restricted safety area would result in the protection of a greater area of limestone forest that was previously not protected. Comment #2: Before implementation of any of the proposed alternatives, the Navy would conduct more comprehensive pre- and post-construction surveys within the proposed range areas to better determine the presence of host plants, larvae, and adult butterflies within the project area. Additional periodic surveys would be conducted once the ranges are operational to provide long-term monitoring of the status and presence of listed and candidate species within the Rte 15 Range Complex. Comment #3: Before implementation of any of the proposed alternatives, the Navy would conduct more comprehensive pre- and post-construction surveys within the proposed range areas to better determine the presence of individual host plants and clumps of host plants, larvae, and adult butterflies within the project area. Comment #4: Additional information regarding the potential for noise associated with the proposed action to impact butterflies and caterpillars has been incorporated into the FEIS impact analysis. Given the distance from the range firing area to any potential caterpillars or adult butterflies, the intensity of the noise associated with the weapons proposed for use, the frequency of the noise, and the intermittent nature of proposed range activities (i.e., weapons firing is not a continuous operation and the associated noise is also not continuous), it is highly unlikely that weapons firing within the ranges would acoustically impact caterpillars or adult butterflies. Comment #5: Thank you for pointing out the inconsistency and the incorrect statement on page 10-117. The FEIS has been revised accordingly to reflect that butterflies and host plants were observed within the vicinity of the proposed ranges. Pg 5, Conclusion, 2nd paragraph: Before implementation of any of the

General Comments

1. The DEIS describes two alternatives for construction of firing ranges for training US Marines on "Route 15 Lands". However, Alternatives A and B are not substantively different (See Figures 10.2-10 and 10.2-12 in the DEIS). Both alternatives would be constructed on the same footprint and both would require procurement of additional, non-DoD land from private land owners and the Government of Guam. The DEIS does not explain why other alternatives were not considered, such as expansion and improvement of existing firing ranges on Andersen Air Force Base or construction of firing ranges in the Naval Magazine area or on Tinian. We wonder if some of these options were rejected because of interservice rivalry among the Marines, Air Force and Navy.
2. According to the DEIS Volume 2, Chapter 10, page 14: "Survey methods are provided in detail in the *Natural Resources Survey Report* (NR Survey Report, in preparation, estimated completion in November-December 2009)." This report is cited 58 times in Volume 2, Chapter 10 although it is missing in the list of references for this volume of the DEIS. One of us (AM) requested a copy of the report and were informed that it is not available (see email exchange with NAVFAC in Appendix 1). Without detailed information on survey methods, geographic coverage, and sampling effort, it is impossible to evaluate validity of conclusions based on the natural resources surveys. In our opinion it is unethical for NAVFAC to withhold their Natural Resources Survey Report until after the end of the DEIS public comment period. Surely a draft of this report exists and data from it were used to write the DEIS. This draft should be shared with those interested in reviewing of the DEIS.
3. The 90 day comment period for the 11,000 page DEIS was too short. There are several other environmental issues which concern us, especially inadequate plans to prevent introduction of invasive species. However, time does not permit us to provide comments on all of our concerns.

Comments on Potential Impacts to the Endangered Mariana Eight Spot Butterfly

1. Alternative A and B for construction of firing ranges on Route 15 lands will destroy and fragment limestone forest habitat which is critical for the survival of the Mariana eight spot butterfly and several other species of endangered, endemic plants and animals. The minimum habitat size for these species is unknown and loss of even a small area could wipe out the existing population.
2. The 2009 survey (Campora and Lee 2009), intended to evaluate the status of the Mariana eight spot butterfly, detected the presence of the Mariana Eight Spot butterfly within all three linear transects even though sampling effort was minimal:
 - The survey lasted only 10 days, July 15 through July 24, 2009. Thus the survey results in a "snapshot" which provides no information on seasonal temporal or spatial changes in the distribution of Mariana eight spot butterflies living on Route 15 lands.
 - The transects covered only a minute proportion of the Route 15 lands (See Figure 1 in this document)
 - The North transect extended onto the footprint of the proposed project by only a few meters, and only on one day, July 15, 2009 (See Figure 2 in this document)
 - The South transect extended into the area within the footprint for the proposed machine gun firing range on one day, July 16, 2009.(See Figure 3 in this document)

Because of the small area covered and limited sampling effort, it is not surprising that this rare butterfly was not detected within the footprints of the proposed firing ranges, even though individuals may be living within these areas. The adult observed in 2008 was only 91 m from the Alternative A proposed machine gun range and the adult observed in 2009 was only 15 m northeast of the proposed northern-most fence line. Adult butterflies require resources in addition to host plants for oviposition,

proposed alternatives, the Navy would conduct more comprehensive pre- and post-construction surveys within the proposed range areas to better determine the presence of host plants, larvae, and adult butterflies within the project area. Additional periodic surveys would be conducted once the ranges are operational to provide long-term monitoring of the status and presence of listed and candidate species within the proposed Route 15 Range Complex.

such as flowers as nectar sources and puddles for minerals. These resources may be ephemeral and widely dispersed within the habitat. Most butterflies are highly mobile and cover large areas during daily foraging. Minimum habitat size for sustaining a population of Mariana eight spot butterflies is unknown.

3. The DEIS states that "Scattered individuals of its two host plants were also observed within the proposed fence line and access road footprints. Because only scattered host plants would be removed and the large mixed host plant areas would remain, impacts would be less than significant." (DEIS-Volume 2, Chapter 10, page 10-112). It is a mistake to assume that large clumps of host plants are more valuable to this species than individual plants scattered over larger areas. Survival on isolated plants could may be higher .because of lower predation and parasitism. Presence of host plants may not be sufficient for larval survival. Many species of caterpillars can only utilize young leaves which have not hardened and which do not contain high levels of plant toxins. For these species, a large area of habitat is required to ensure that there are enough plants with young foliage to nourish caterpillars.
4. The DEIS states that "The eight-spot butterfly is unlikely to be affected by noise and activity in nearby ranges. Impacts would be less than significant."(DEIS-Volume 2, Chapter 10, page 10-114) We don't think there is any science to support this statement. One or more studies of the impact of noise on butterflies need to be cited. It is possible that noise, such as that from guns, will disrupt the behavior of caterpillars which use acoustic communication.
5. In discussion of the Alternative B for construction of firing ranges on Route 15 lands, the DEIS claims that "No host plants or butterflies have been documented within or near the range footprints." (page 10-117) and it claims that "This candidate species was observed near the Alternative B UD range area during 2008 site-specific surveys (NR Survey Report in preparation). Its two host plants were also observed in that area, and in areas within the UD range footprint." (page 10-120). Obviously, one of this statements is false but there is no way to find out which is correct without access to the Natural History Survey Report.

Conclusion

We strongly disagree with the statement that "Impacts would be less than significant." in regards to proposed construction of firing ranges on Route 15 lands (both Alternative A and Alternative B). (We note that this stock phrase "Impacts would be less than significant." is repeated 42 times in Volume 2, Chapter 10, regardless of data to the contrary.)

Available information clearly shows that habitat destruction associated with alternatives A and B will negatively impact the Mariana eight spot butterfly and other endangered species living on Route 15 lands. If plans for the firing ranges go ahead, it is likely that the Mariana eight spot butterfly and other endangered species living in the limestone forest habitat will be locally extirpated on Route 15 lands. It is unlikely that this unfortunate ecological event will be documented because there are no plans to allow access to the the proposed range complex for monitoring biological resources.

For these and other reasons, we support the NO ACTION ALTERNATIVE for construction of firing ranges or any other military installation on Route 15 lands.

B-020-001 | **APPENDIX 1:**

Original Message-:

From: Aubrey Moore [mailto:amoore@ugam.uog.edu]
Sent: Friday, January 15, 2010 1:35
To: Pepi, Vanessa E CIV NAVFAC PAC
Cc: Campora, Cory E CIV NAVFAC PAC
Subject: DEIS - NR Survey Report

Hi Vanessa,

A lot of data presented in the DEIS Vol 2 Ch 10 comes from a document referred to as the "NR Survey Report , in preparation". Unfortunately, "NR Survey Report" is not listed in the references at the end of the chapter. I'm finding it hard to evaluate some of the info presented in the DEIS without access to the survey methods. Where can I get a copy of the "NR Survey Report"?

All the Best,

Aubrey Moore

Reply:

Subject: RE: DEIS - NR Survey Report
From: "Pepi, Vanessa E CIV NAVFAC PAC " <vanessa.pepi@navy.mil>
Date: Mon, 18 Jan 2010 01:54:40 -1000
To: "Aubrey Moore" <amoore@ugam.uog.edu>
CC: "Campora, Cory E CIV NAVFAC PAC" <Cory.Campora@navy.mil>

Hello Aubrey,

The NR survey report is not completed yet. Surveys have been ongoing and the report couldn't be included within the DEIS. As soon as we have it, we can send it to you.

Thanks,

Vanessa

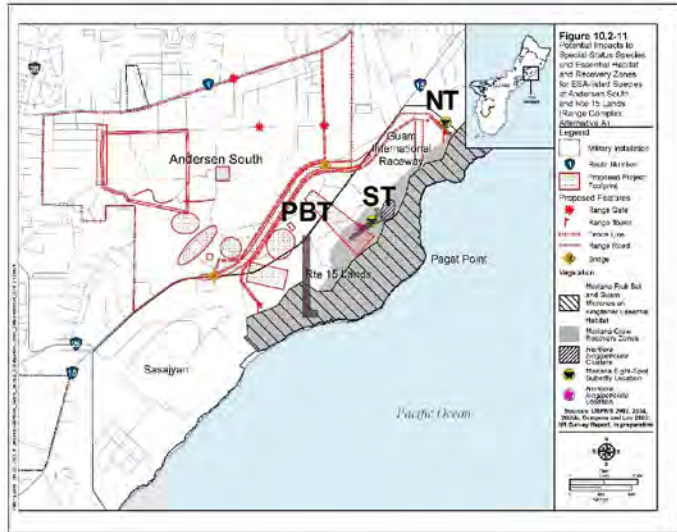


Figure 1. Transect locations from Campora and Lee (2009) overlaid onto map of Anderson South and Route 15 lands from the DEIS (Volume 2, Chapter 10, Figure 10.2.11, Page 10-111)

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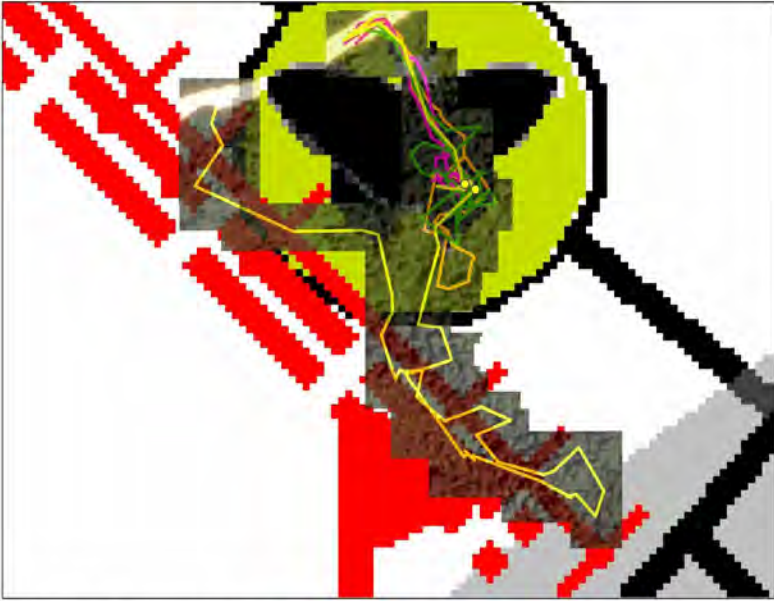


Figure 2. North Transect showing GPS tracks from Campora and Lee (2009). Yellow dots indicate locations of an adult and several immature Mariana eight spotted butterflies observed between July 15 and July 23, 2009. Note that the survey extended onto the footprint of the proposed project by only a few meters, and only on one day, July 15, 2009.



Figure 3. South Transect showing GPS tracks from Campora and Lee (2009). Yellow dots indicate locations of several immature Mariana eight spotted butterflies observed between July 16 and July 24, 2009. The butterfly symbol indicates the location of a single adult Marianas eight spotted butterfly observed during vegetation surveys in 2008. Note that the area within the footprint for the proposed machine gun firing range, indicated by red stippling, was surveyed only briefly on one day, July 16, 2009.



Figure 4. Pagat Cave Trail showing GPS tracks from Campora and Lee (2009). The yellow dot indicates location of three immature Mariana eight spotted butterflies feed on *Elatostema calcareum*, one of the two host plants for this species. The trail was surveyed only once, on July 22, 2009.