



Commonwealth of the Northern Mariana Islands

Department of Lands and Natural Resources

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May 27, 2021

Mr. Lance Smith
Protected Resources Division,
NMFS, Pacific Islands Regional Office,
NOAA Inouye Regional Center
1845 Wasp Boulevard, Building 176
Honolulu, HI 96818

Subject: Proposed Critical Habitat Designation for Seven Threatened Corals in U.S. Waters in the Indo-Pacific (NOAA-NMFS-2016-0131)

Dear Mr. Smith:

We are pleased to submit our comments regarding the Proposed Rule, "Endangered and Threatened Species; Critical Habitat for the Threatened Indo-Pacific Corals" published in the Federal Register November 27, 2020¹. The CNMI also appreciates NMFS extension of the comment period in response to territorial concerns.

The Commonwealth of the Northern Mariana Islands (CNMI) Department of Lands and Natural Resources including the Division of Fish and Wildlife has jurisdictional authority for management of fish and wildlife including endangered species in the CNMI. The CNMI is home to 31 terrestrial species listed² as endangered or threatened under the Endangered Species Act (ESA), and an additional 17 marine species³. The CNMI has the highest number of ESA-listed species both per unit land area and per capita of all U.S. states and territories. Our government and people are intimately aware of ESA, particularly the restrictions that ESA can impose on human activities. We, therefore, have a significant interest in the proposed Critical Habitat for the Threatened Indo-Pacific Coral species for the CNMI.

The CNMI concurs with NMFS on the need to conserve resources and protect threatened and endangered species to an extent which is practical, and beneficial to the resource as well as the CNMI. We also believe that information used to make these designations need to be accurate, quantifiable, verifiable and current. Our comments are focused on the proposed critical habitat

¹ See 85 Fed. Reg. 76262 (November 27, 2020)

² <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=MP&statusCategory=Listed&s8fid=112761032792&s8fid=112762573902>

³ <https://www.fisheries.noaa.gov/pacific-islands/endangered-species-conservation/marine-protected-species-mariana-islands>

designations for threatened coral species which are known to occur in CNMI waters. Listed species for the CNMI are; *Acropora globiceps*, *Acropora retusa* and *Seriatopora aculeata*¹.

Proposed Habitat Map Delineation

The CNMI is concerned with the critical habitat boundaries developed for the islands of Maug, Asuncion, Pagan, Anatahan, Saipan, Tinian, Aguijan, and Rota⁴. The proposed maps covered depths ranging from 0-20 meters and 0-40 meters for islands with confirmed species presence based on best available information. The maps did not delineate exclusions of habitat types/substrate which based on NOAA criteria are not conducive for the species survival (seagrass areas, drainages, mud flat, sand, rubble, pavement dominated with algal cover, etc.). We have provided a map delineating these substrates for reference, and would recommend their exclusion as critical habitat for the 3 threatened coral species listed for the CNMI (Appendix A). A table is provided listing the source maps and exclusion criteria used to generate the CNMIs preferred habitat delineation for the three threatened corals species list for the CNMI.

Insufficient surveys have been done in the CNMI to verify presences of these species within CNMI waters. However, their listing and critical habitat designation continues. We encourage NOAA-NMFS to explore options to fund research projects in the archipelago to better capture presence/absences information for these three species.

Cover types also play a significant role in the recruitment of corals as certain substrate cover types may hinder coral settlement on to consolidated hard substrate. This is stated within the Endangered Species Act Critical Habitat Information Report, Subsection 3.2 Physical or Biological Features Essential for Conservation⁵.

“Reproductive, recruitment, growth, and maturation habitat. Sites that support the normal function of all life stages of threatened corals are natural, consolidated hard substrate or dead coral skeleton, **which is free of algae or sediment at the appropriate scale at the point of larval settlement or fragment reattachment**, and the associated water column. Several attributes of these sites determine the quality of the area and are useful in considering the conservation value of the associated feature:

- (1) The presence of crevices and holes that provide cryptic habitat, the presence of microbial biofilms, or the presence of crustose coralline algae;
- (2) Reef scape with no more than a thin veneer of sediment and low occupancy by fleshy and turf macroalgae;

⁴ Endangered Species Act, Critical Habitat Information Report: Basis and Impact Considerations of Critical Habitat Designations for Threatened Indo-Pacific Corals; *Acropora globiceps*, *Acropora jacquelineae*, *Acropora retusa*, *Acropora speciosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, *Seriatopora aculeata*. NMFS-Pacific Islands Regional Office, October 2019, 165 pages.

⁵ Endangered Species Act, Critical Habitat Information Report: Basis and Impact Considerations of Critical Habitat Designations for Threatened Indo-Pacific Corals; *Acropora globiceps*, *Acropora jacquelineae*, *Acropora retusa*, *Acropora speciosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, *Seriatopora aculeata*. NMFS-Pacific Islands Regional Office, October 2019, 165 pages.

- (3) Marine water with levels of temperature, aragonite saturation, nutrients, and water clarity that have been observed to support all demographic functions; and
- (4) Marine water with levels of anthropogenically-introduced chemical contaminants that do not preclude or inhibit any demographic function.”⁶

A significant portion of the benthic substrate around the proposed islands consist of pavement or hard bottom, which is considered essential. However, substrates which have a dominant cover type of turf algae should be excluded as it is considered unfavorable for coral settlement. We believe that minimal effort was invested to delineate these cover types and exclude them as critical habitat. The proposed maps did not take into account hard substrates which have a dominant cover of fleshy or calcareous algae. Moreover, although listed within the Proposed Critical Habitat Designation document, the proposed map did not delineate sand, rubble, or seagrass habitat. The alternative maps developed by the CNMI delineates areas which do not qualify for coral critical habitat.

In the Endangered Species Act Critical Habitat Information Report, Subsection 3.2.3 Physical or Biological Features Essential for Conservation- Artificial Substrates and Certain Managed Areas Not Included stated;

“Only natural substrates provide the quality and quantity of recruitment habitat necessary for the conservation of threatened corals. Artificial substrates are generally less functional than natural substrates in terms of supporting healthy and diverse coral reef ecosystems (Edwards and Gomez, 2007; USFWS, 2004). Artificial substrates are typically man-made or introduced substrates that are not naturally occurring to the area.” “Therefore, they are not essential to the conservation of the species. Specific managed areas not included in critical habitat are listed in Appendix A of this report.”

A general listing of these artificial substrates is provided as appendices within the Endangered Species Act Critical Habitat Information Report. However, the proposed critical habitat map did not delineate all existing artificial substrates along the shorelines. We believe that the development of the critical habitat maps was done in haste and failed to accurately account for the following; boating ramps, docks, harbors, marinas, drainages, sewage outfall, piers, pipes, wrecks, light houses, navigational markers, moorings, etc. We have provided a list of these structures in the following table. We have also provided a map delineating some of these infrastructures for reference, and would recommend their exclusion as critical habitat for the 3 threatened coral species listed for the CNMI (Appendix A).

⁶ Endangered Species Act, Critical Habitat Information Report: Basis and Impact Considerations of Critical Habitat Designations for Threatened Indo-Pacific Corals; *Acropora globiceps*, *Acropora jacquelineae*, *Acropora retusa*, *Acropora speciosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, *Seriatopora aculeata*. NMFS-Pacific Islands Regional Office, October 2019, 165 pages.

Island	Infrastructure Type	Location	Identified on the Proposed Map
Saipan	Boat ramp	Tanapag Village	No
Saipan	Boat ramp	DPW beach	No
Saipan	Boat ramp	Fishing Base	No
Saipan	Pier	Fishing Base	No
Saipan	Boat ramp	Sugar Dock	No
Saipan	Sugar Dock Channel	Susupe	No
Saipan	Pier	Sugar Dock	No
Saipan	Fishing Base Channel	Garapan	No
Saipan	Managaha Pier	Managaha	No
Saipan	Sea plan ramp	Lower Base	No
Saipan	Sea plane ramp	Lower Base	No
Saipan	Sea port	Puerto Rico	Yes
Saipan	Outer Cove Marina	Puerto Rico	No
Saipan	Smiling Cove Marina	Puerto Rico	No
Saipan	Wreck (Chinsen)	Saipan Lagoon	No
Saipan	Wreck (Concrete Barge)	Saipan Lagoon	No
Saipan	Wreck (Zero)	Saipan Lagoon	No
Saipan	WWII Tanks	Saipan Lagoon	No
Saipan	Outfalls/Drainages	Saipan Lagoon	No
Tinian	Tinian Harbor	San Jose	Yes
Tinian	Marina	San Jose	Yes
Tinian	Boat ramp	San Jose	Yes
Tinian	Outfalls/Drainages	San Jose	No
Rota	Harbor	Rota West Harbor	No
Rota	Harbor	Rota East Harbor	No
Rota	Marina	Rota West Harbor	No
Rota	Boat ramp	Rota West Harbor	No
Rota	Outfalls/Drainages	Songsong	No
Rota	Wreck (Shun Maru)	Sasanhaya Bay	No
Rota	7-screws	Sasanhaya Bay	No
Rota	Sub chaser	Sasanhaya Bay	No

The proposed critical habitat map did not include marine protected areas within the proposed critical habitat delineation. These areas include; conservation areas, sanctuaries, reserves, which are managed by the CNMI. These areas provide high levels of protection to the corals and their habitats. Placing these areas under critical habitat is an unnecessary duplication of conservation

efforts. We have provided a map delineating these areas for reference, and recommend their exclusion as critical habitat for the 3 threatened coral species listed for the CNMI (Appendix A).

Limited information on the species listed for the CNMI

We have identified a number of issues with the information used to determine the presence of listed coral species in the CNMI. One issue in particular that was most concerning is the difficulty of identifying these corals in the field. A memo regarding the species identification uncertainty for the 15 ESA-listed Indo-Pacific coral species⁷ was, submitted by the NOAA contracted coral expert, on April 10th, 2015. The listed factors ranging from poor quality type specimens, lack of samples to verify photos, inter-specific and intra-specific variability, human subjectivity, unreliable published information, limited genetic information, etc. has confirmed our concerns regarding the possibility of species misidentification.

Furthermore, certain species have been listed for the CNMI with information based on personal communication. Of the three coral species listed for the Marianas, only one *A. globiceps* seems to have sufficient information on its presence around the islands. A number of records for *A. globiceps* have been reported through various research expeditions. This is not the case with the two other species *A. retusa* and *S. aculeata*. The information on the presence of these two species in the Marianas is limited. References for the presence of these species were based on personal communications with regional experts. After recent discussions between our Guam counterparts and the Guam referenced expert, it was noted that *S. aculeata* could not be located for confirmation after its initial identification and sighting on Guam. *A. retusa* is listed as being present on the island of Tinian, within the military boundaries. The proposed rule failed to provide a reference or statement on the presence of *A. retusa* on other areas of Tinian. We believe that designating areas around Tinian for *A. retusa* is based on assumptions and need to be validated. Furthermore, no other records of *A. retusa* has been listed for the other islands of the CNMI. While personal communication is commonly as best available science by NMFS, effort must be made to confirm the sources when possible. We encourage NOAA-NMFS to explore options to fund research projects in the region to better capture presence/absences information for these three species before a designation for critical habitat is made.

Best available science criteria

NOAA-NMFS is tasked to search, compile, and interpret all available biological information to determine critical habitat needs of species, (i.e., use the “best available science”). However, we have concerns in cases where there is very little biological information available for a species, or the information is extremely outdated, or does not meet modern scientific standards. We have similar experience with species listings in our region based on outdated and flawed information, which required NOAA-NMFS to make significant assumptions in applying the five ESA listing factors (80 FR 49424).

⁷ Fenner, 2015. Species identification uncertainty for the 15 ESA-listed Indo-Pacific coral species. Memorandum to file, NMFS Pacific Islands Regional Office, April 2015, 94 pages.

Current practices do not offer guidance for these cases where there is a high degree of uncertainty in the underlying science that is the basis of a Critical Habitat designation. NOAA-NMFS's approach appears to conservatively designate critical habitat based on the potential for a species to be present in an area, knowing that the biological information used is lacking. Again, this action was done in haste and did not exclude areas which do not fall within the critical habitat criteria. We believe this approach does not effectively conserve these species or benefit the territory. We therefore recommend that, information based on sound science should be utilized when determining critical habitat for the three coral species listed for the CNMI. We further recommend that a critical habitat designation is limited to areas that at a minimum, have a reasonable degree of confidence that the area meets the definition of critical habitat, but excludes areas where "best available science" information is insufficient.

Regulatory concerns

The CNMI is concerned with the critical habitat designations for the three threatened coral species may place unnecessary regulatory burden on federally funded projects. The state, private businesses, educational institutions, and non-governmental organizations are required to complete a myriad of state and federal regulatory mandates in order to proceed with projects. Many of these requirements are duplicative.

The relative benefit to the recovery of these three coral species is also a concern for the CNMI, as the threatened species listed for this CNMI are considered to have a wide distribution throughout its region, but a low occurrence in the Marianas. NOAA-NMFS indicated in the proposed rule that coral reef areas within U.S. jurisdiction provide no more than 2% of each listed species' total range⁸. The CNMI is concerned that critical habitat designation for the listed coral species of the Marianas does not adequately protect the species as a whole. NOAA-NMFS should reassess the critical habitat designation for these three listed corals within the Marianas and the conservation benefits for the species throughout its range.

NOAA-NMFS has recently initiated a 5-year status review for the listed coral species. Given that information is lacking for a number of these species, especially those listed for the Marianas, it would be prudent to postpone critical habitat designation for the coral species to allow for the development of updated biological information for these species. This new information can then be used to support the development of better critical habitat delineations for all the Territories and the Commonwealth.

CNMI Rules and Regulations on Corals

The CNMI DLNR DFW believes that special consideration should also be given to the CNMI since efforts to protect and conserve corals and coral habitat were already in place. In the October 2019 NOAA NMFS report⁹, DoD-controlled marine areas were exempted for three

⁸ See 85 Fed. Reg. 76262 (November 27, 2020)

⁹ Endangered Species Act, Critical Habitat Information Report: Basis and Impact Considerations of Critical Habitat Designations for Threatened Indo-Pacific Corals; *Acropora globiceps*, *Acropora jacquelineae*, *Acropora retusa*,

reasons: 1) clear and recent documentation of marine conservation work in the Mariana Islands; 2) good faith efforts by the Navy to conserve corals and their habitat in the Mariana Islands; and 3) a Navy history of marine conservation work in the Mariana Islands. The CNMI should also be exempted from the coral critical habitat designation for the following reasons: 1) the CNMI government (BECQ) had established a long-term monitoring program to track the changes in coral health and water quality long before the ESA coral species were listed; 2) the CNMI government and NGOs have initiated coral restoration efforts that will be beneficial to ESA-listed corals; and 3) the CNMI also has a long history of conservation efforts for all marine life before the corals were considered to be listed under the ESA. These efforts were done by the people of the CNMI to conserve our marine resources around our islands because we understand the importance of conservation. A few examples are presented below.

- In 1983, the Coastal Resources Management Act was established to promote the conservation and wise development of coastal resources (P.L. 3-47). This law establishes the Coastal Resources Management Program and Policy whose goals are mitigate adverse environmental impacts including those aquifers, beaches, estuaries and other coastal resources, manage ecologically significant resource areas for their contribution to marine productivity, and preserve the functions and integrity of reefs, mangroves and other significant natural areas among others.
- Under the Bureau of Environmental and Coastal Quality, the Coastal Resources Management (CRM) Office's Marine Monitoring Program was created to carry out the goals of the CRM Program and Policy. The Marine Monitoring Program is a long-term interagency project, in collaboration with DLNR and NOAA, whose goal is to track the changes in coral health and water quality over time in response to natural fluctuations, acute disturbances, and point and non-point sources of pollution. Other interagency projects include the recent establishment of a coral nursery for future coral restoration projects, which has since produced promising results. Aside from programs established within the government agencies, laws to promote conservation in the CNMI have been established.
- As part of the Trust Territory of the Pacific Islands (TTPI), the Northern Mariana Islands and its fellow island nations within the TTPI created rules and regulations that directly and indirectly protect endangered/threatened corals and other marine life since its establishment by the United Nations in 1947. In 1975, the Northern Mariana Islands and the TTPI created the Trust Territory Endangered Species Act of 1975 which "aimed at conserving endangered and threatened species, including research programs to adequately define which species are in fact endangered or threatened, and including, when necessary, the acquisition of land or aquatic habitat or interest therein for the conservation of resident endangered or threatened species" (P.L. No. 6-55, §4, codified at 45 TTC §101–

112). Shortly after the creation of the TTPI Endangered Species Act of 1975, the Northern Mariana Islands formed a political union with the United States as a Commonwealth of the Northern Mariana Islands (CNMI). The people of the CNMI saw the need to protect their natural resources. Article XIV of the CNMI Constitution states that the marine resources of the CNMI “shall be managed, controlled, protected, and preserved by the [CNMI] legislature for the benefit of the people” (Article XIV §1). Furthermore, the islands of Managaha, Maug, Uracas, Asuncion, Guguan, and other islands shall be “used only for the preservation and protection of natural resources” (Article XIV §2).

Additional laws were enacted to strengthen the protection of our natural resources:

- The Marine Sovereignty Act of 1980 was created “to protect the traditional rights and interests of the people of the Northern Mariana Islands in the surrounding sea and the resources thereof, to establish and determine the internal waters, archipelagic waters, territorial sea, exclusive economic zone, and contiguous zone of the Commonwealth” (P.L. 2-7).
- The Fish, Game, and Endangered Species Act was established to create a Fish and Wildlife Division in the Department of Natural Resources, to provide for the conservation of fish, game, and endangered species (P.L. 2-51). Under the act, the Secretary of Lands and Natural Resources “shall, by regulation, determine whether any species should be designated as an endangered species or a threatened species, taking into consideration the status of its habitat or range” and shall also designate critical habitats for endangered or threatened species (2 CMC § 5108(a)). The Division of Fish and Wildlife also regulates the take of corals (*Corallium* spp., hermatypic corals, and other hard corals, soft corals and stony hydrozoans (NMIAC § 85-30.1-201). Several prohibitions of fishing methods regulated by DFW are also in place that indirectly benefit the ESA-listed species. The use of explosives, poisons, electric-shocking devices, SCUBA or hookah and use of certain nets are prohibited for fishing in the CNMI. Several marine protected areas have also been established to protect corals and other marine life (e.g., Managaha Marine Conservation Area, Bird Island Sanctuary, and the Forbidden Island Sanctuary are all no-take marine preserves and are managed by DFW).

In 2003, Executive Directive 235 established the CNMI Coral Reef Initiative Program to coordinate coral reef issues and to implement local action strategy projects to protect coral reefs. In 2017, the Coral Reef Protection Act was established to “protect coral reefs through recover of monetary damages resulting from vessel groundings and anchoring-related injuries, destructive fishing practices, and non-permitted taking of threatened species” (P.L. 20-79).

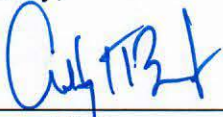
Although the CNMI supports the conservation of species, additional regulations by the federal government for coral critical habitat is not needed. The Northern Mariana Islands is fully capable of managing its resources for the protection of species for generations to come. Before the listing of ESA-listed corals, the CNMI established certain laws and regulations that directly and

indirectly protect corals and its habitats. For these reasons, the CNMI's efforts to protect corals and its habitats should be given the same consideration that was given to DoD for designation exemptions in CNMI waters.

In order to provide for the best conservation management program and to protect species of greatest concerns, the CNMI believes that these objectives can only be accomplished through sincere and open partnerships. Therefore, we encourage NOAA-NMFS to continue to consult with CNMI DLNR and DFW prior to a designation of critical habitat for the three threatened coral species in the Marianas. We are hopeful that a collaborative effort to determine critical habitat will facilitate more efficient species conservation. This is imperative when a critical habitat designation in state waters is being considered.

Thank you for the opportunity to comment on this important issue. We hope that you give our comments your utmost and favorable consideration. Should you have any question, please feel free to contact us at (670)322-9830 / (670) 664-6080.

Sincerely,



Anthony T. Benavente
Secretary
Department of Lands and Natural Resources



Manny M. Pangelinan
Director
Division of Fish and Wildlife

Appendix A

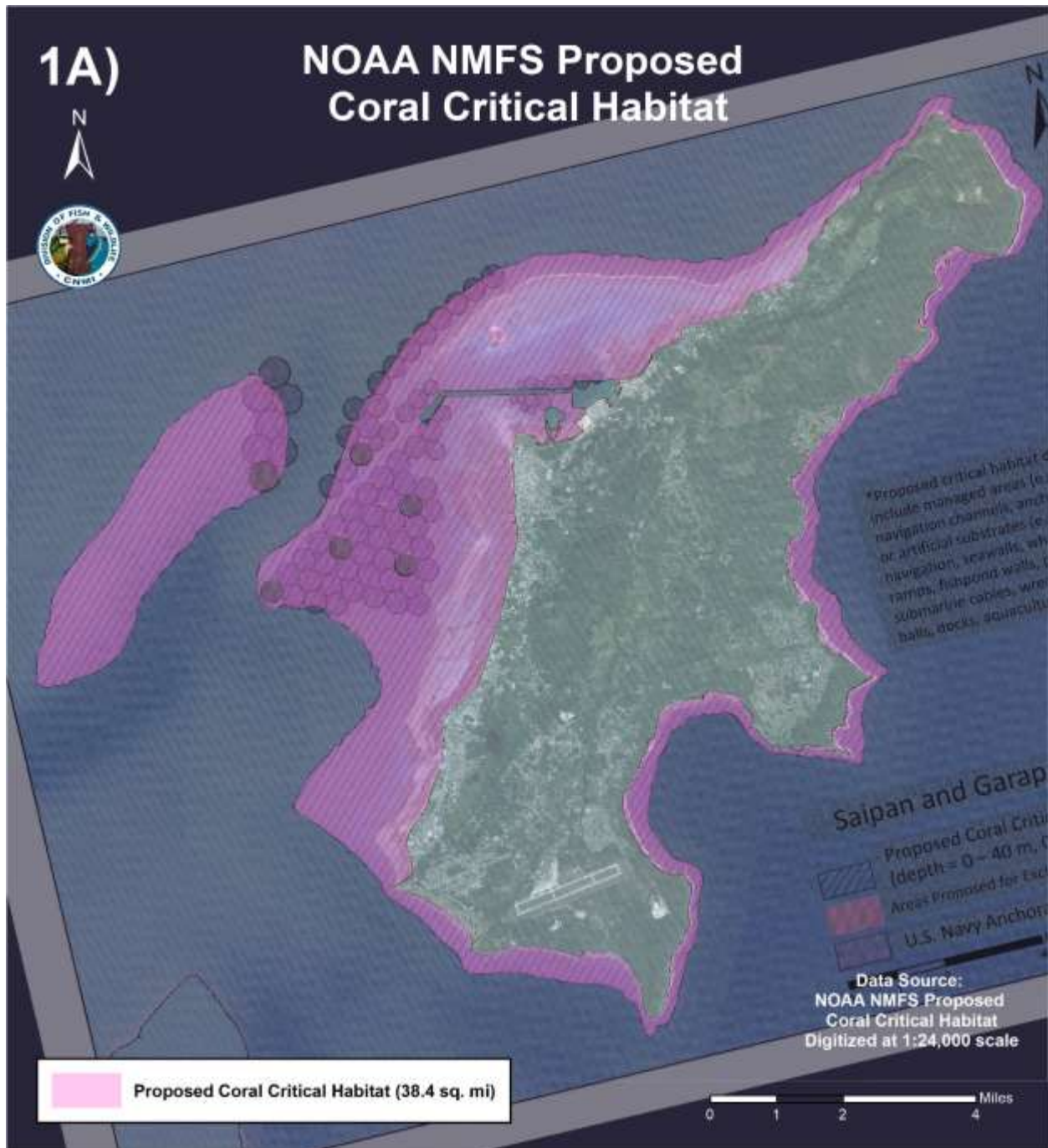


Figure 1a. Saipan, NOAA Proposed Coral Critical Habitat Map.

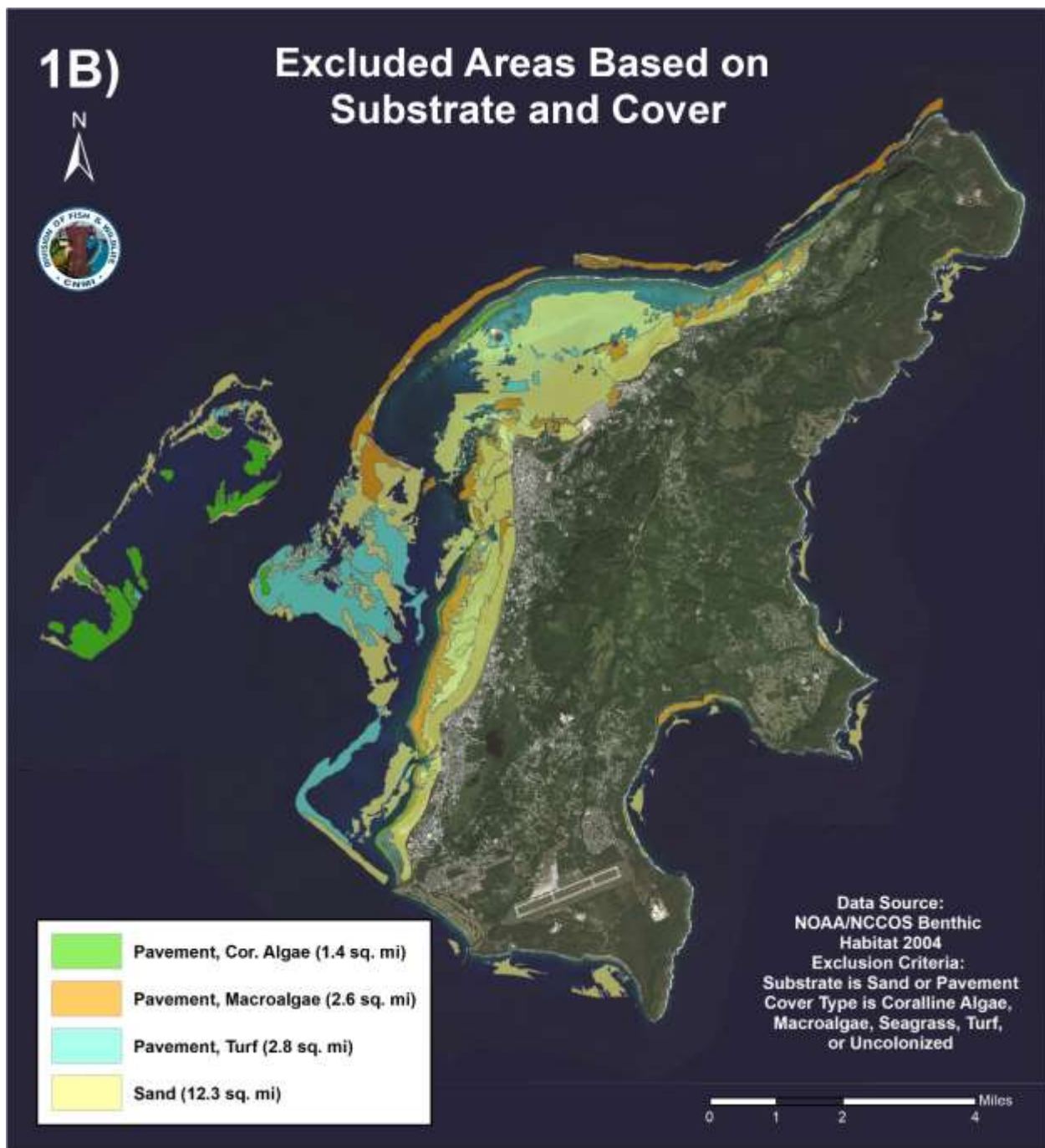


Figure 1b. Saipan, Excluded Areas Based on Substrate and Cover Map.

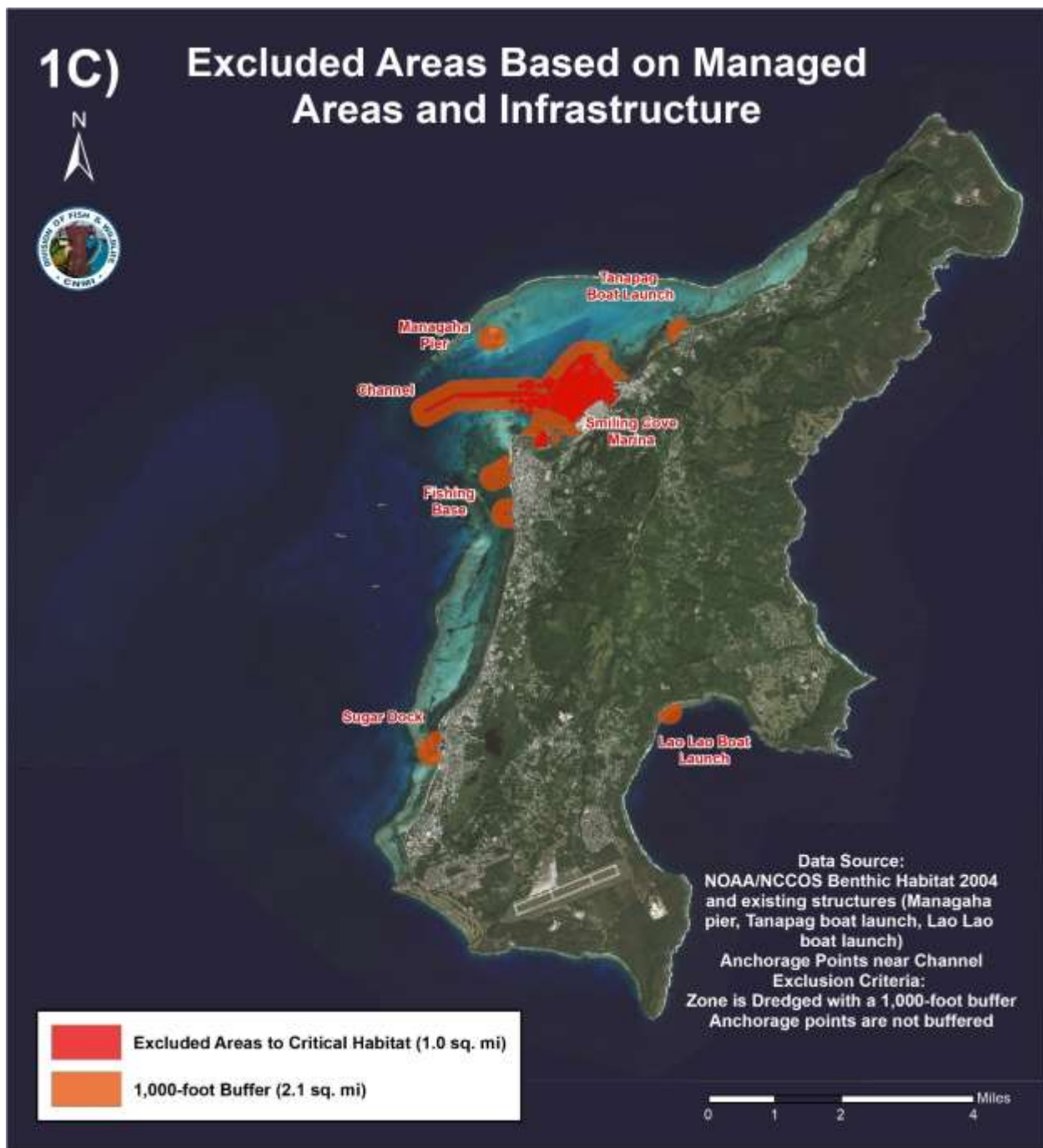


Figure 1c. Saipan, Excluded Areas Based on Managed Areas and Infrastructure.



Figure 1d. Saipan, Excluded Areas Based on Protected Areas.

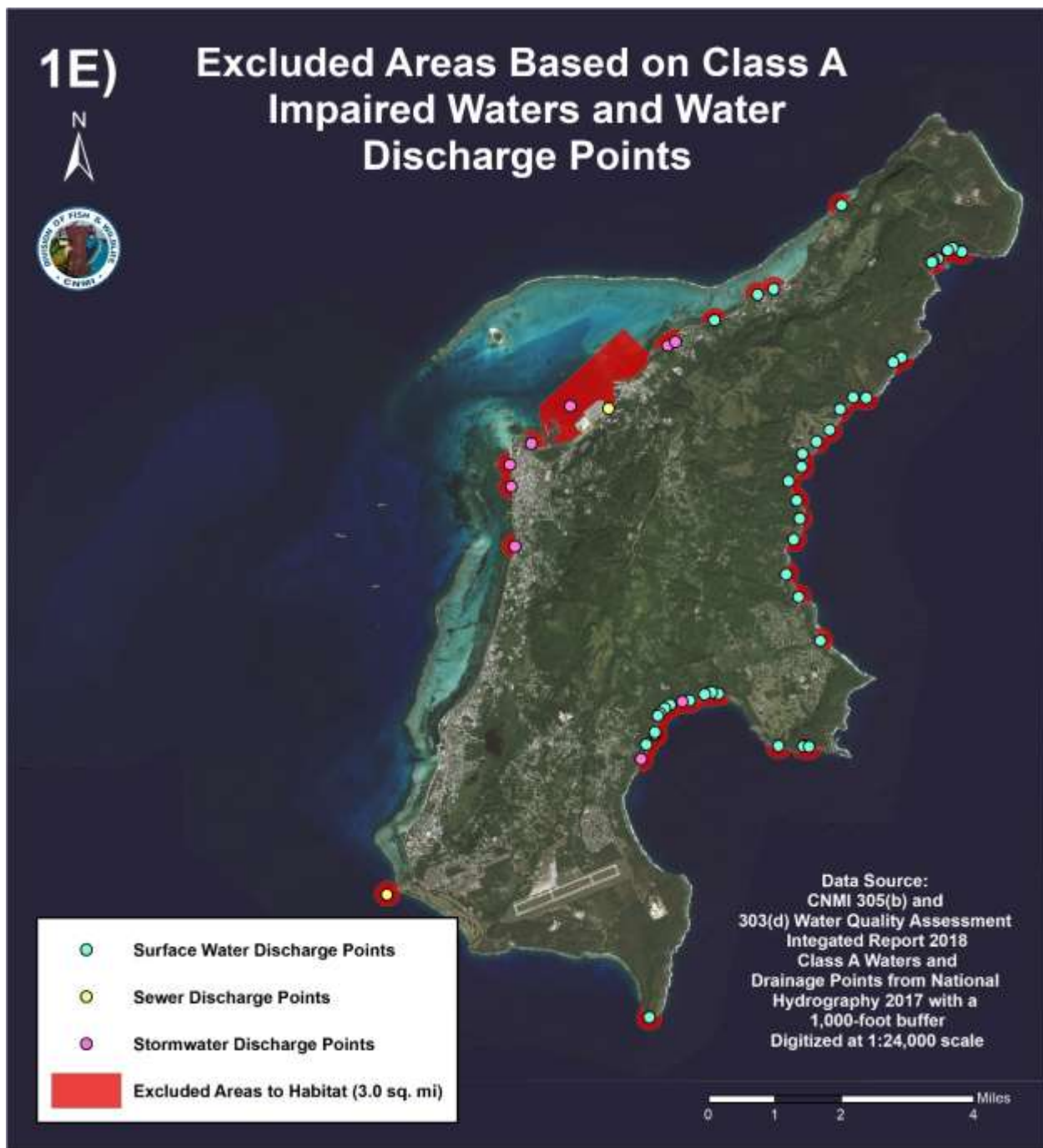


Figure 1e. Saipan, Excluded Areas Based on Class A Impaired Waters and Water Discharge Points.



Figure 1f. Saipan, Excluded Areas Based on Wreck Sites.



Figure 1g. Saipan, Combined Exclusion Areas.

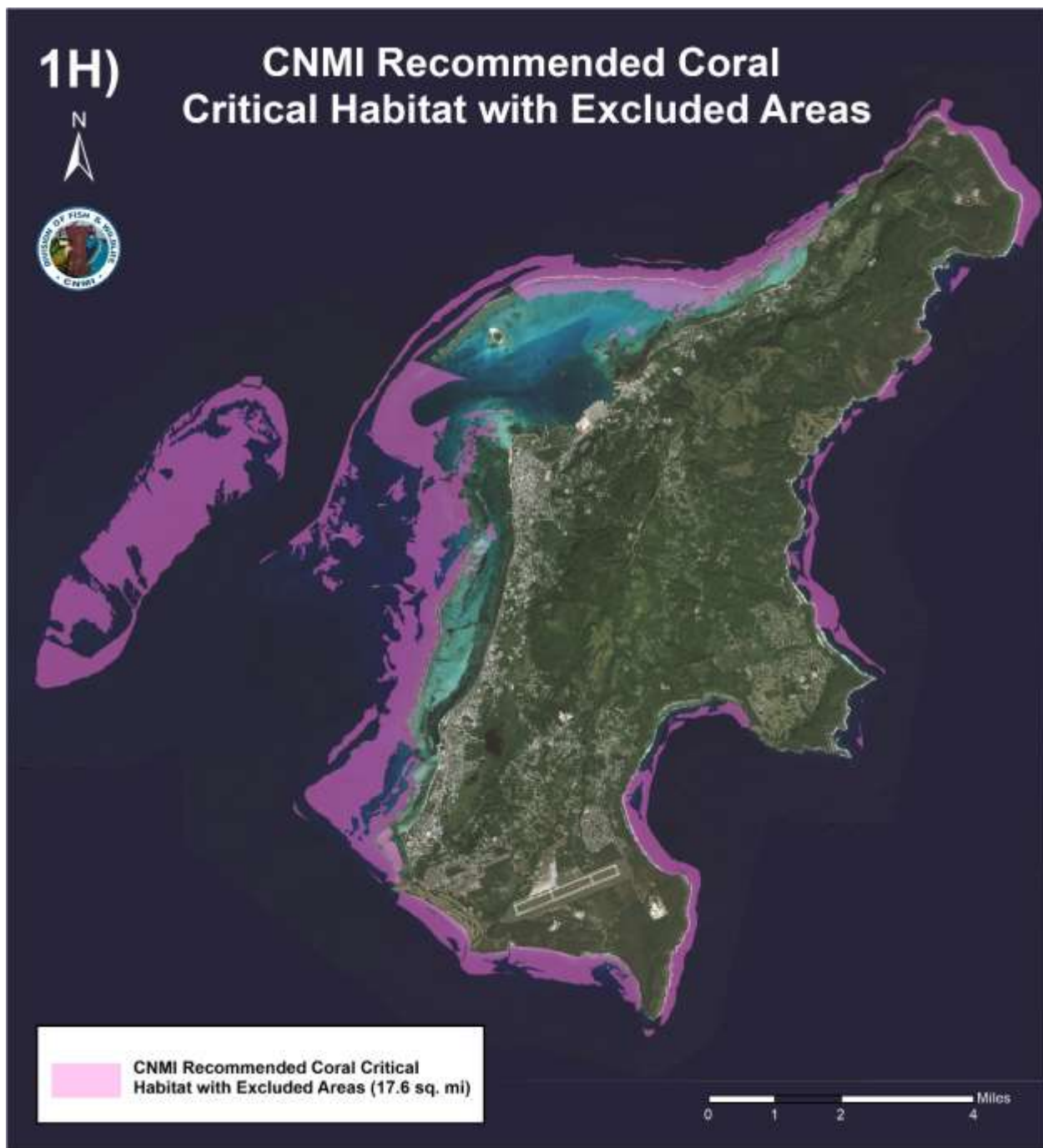


Figure 1H. Saipan, CNMI Recommended Coral Critical Habitat with Exclusions.

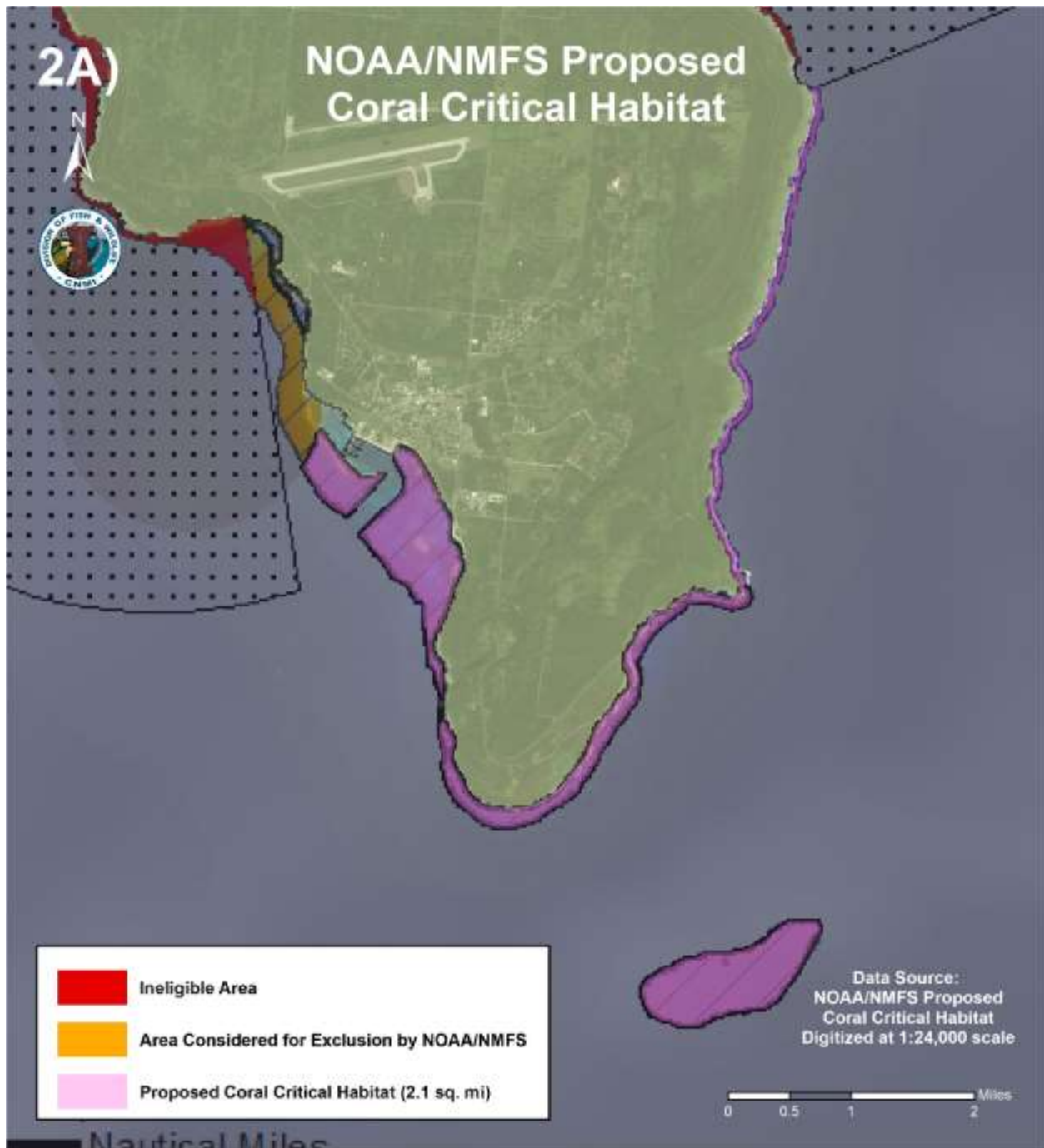


Figure 2a. Tinian, NOAA Proposed Coral Critical Habitat Map.



Figure 2b. Tinian, Excluded Areas Bases on Substrate and Cover Map.

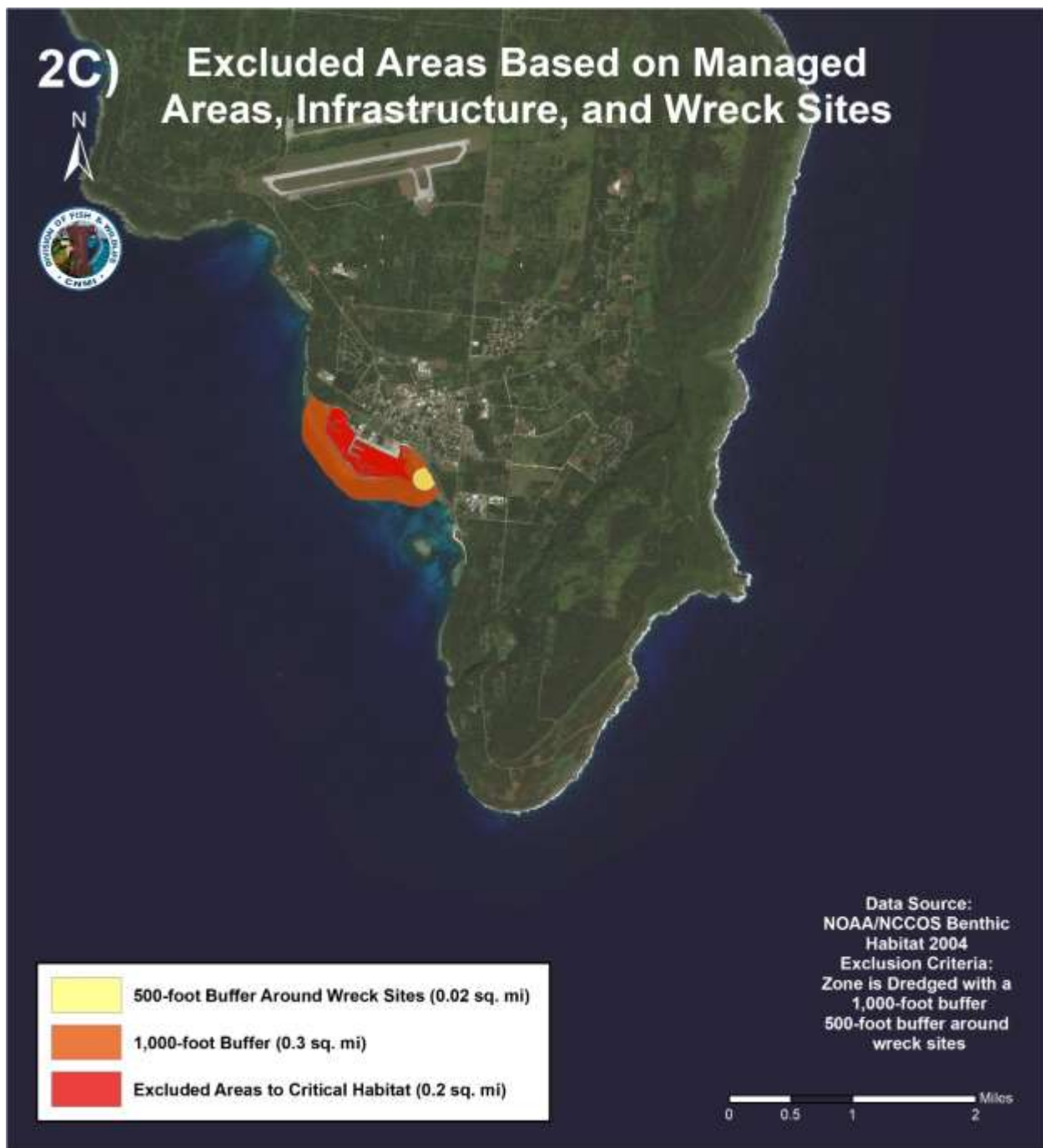


Figure 2c. Tinian, Excluded Areas Based on Managed Areas, Infrastructure and Wreck Sites

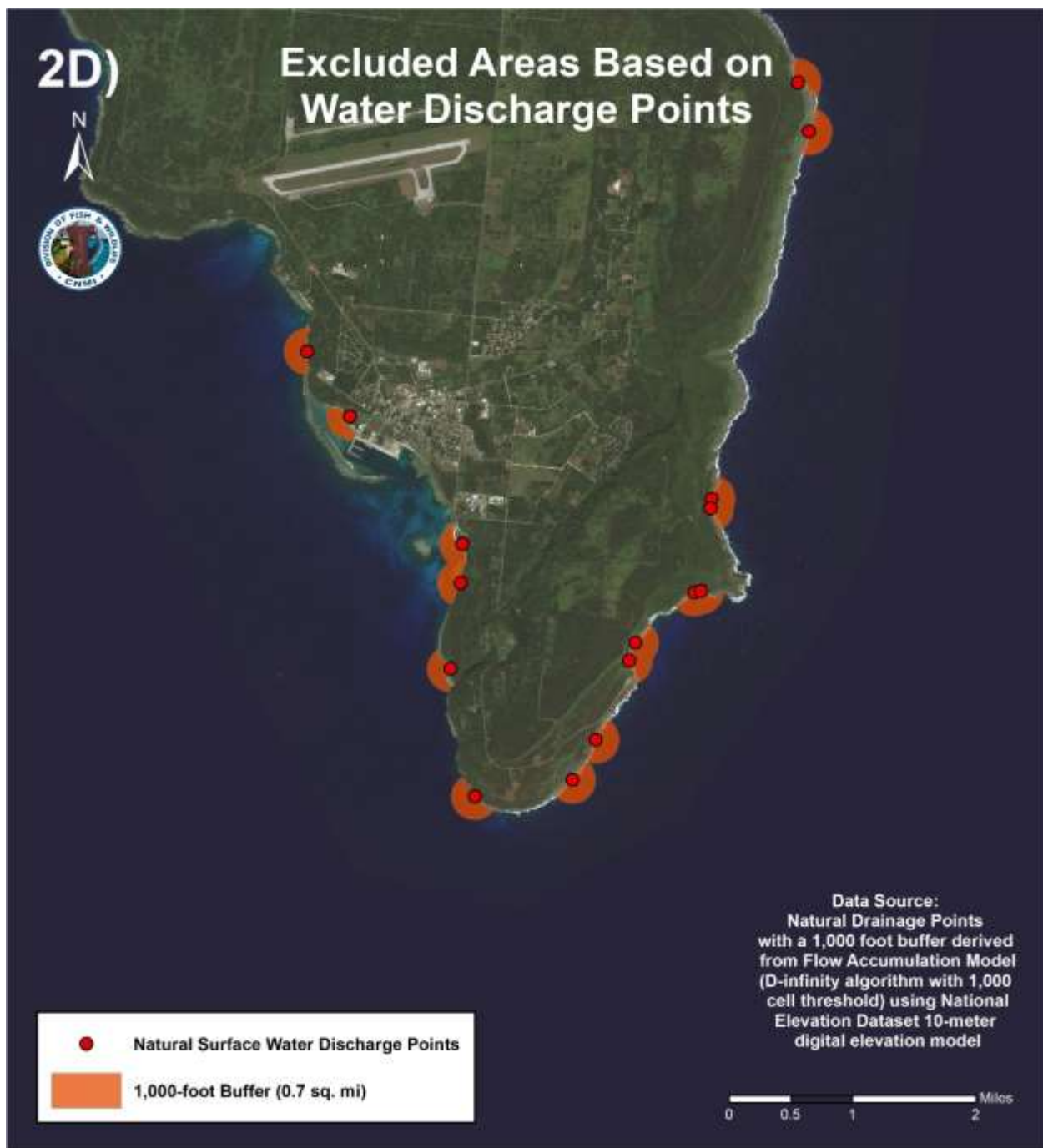


Figure 2d. Tinian, Excluded Areas Bases on Water Discharge Points.



Figure 2e. Tinian, Combined Excluded Areas.

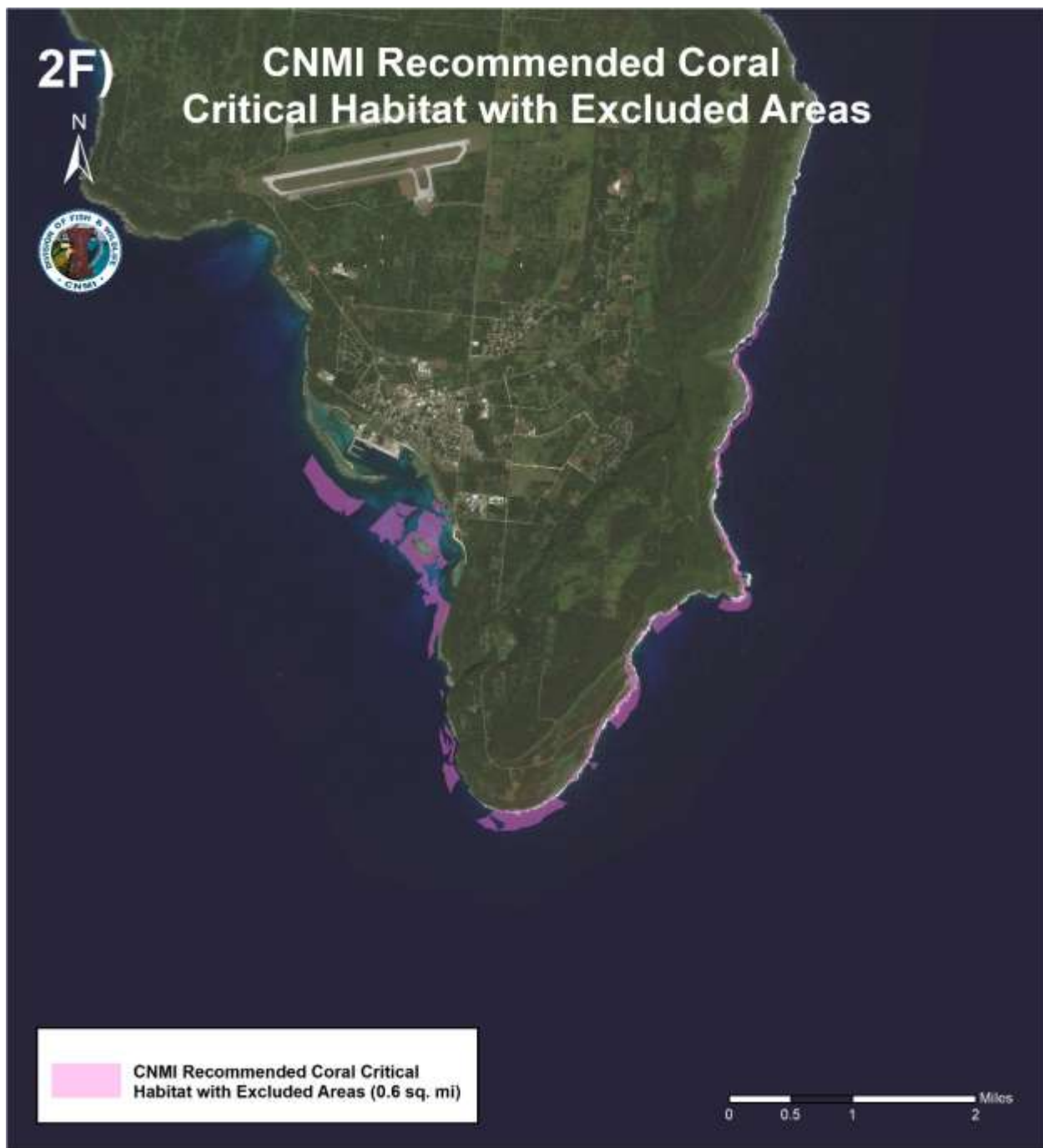


Figure 2f. Tinian, CNMI Recommended Coral Critical Habitat with Excluded Areas.

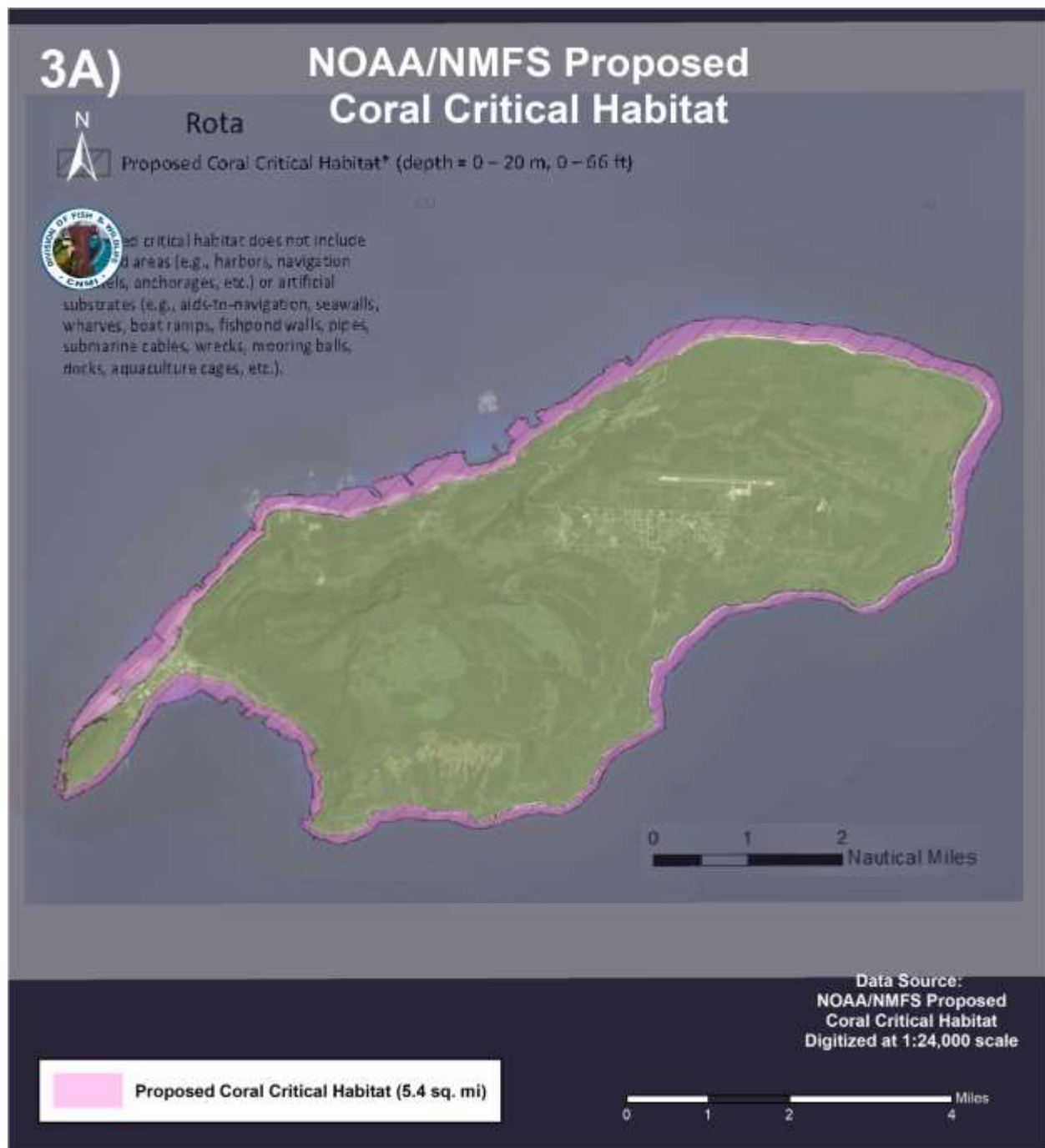


Figure 3a. Rota, NOAA Proposed Coral Critical Habitat Map.

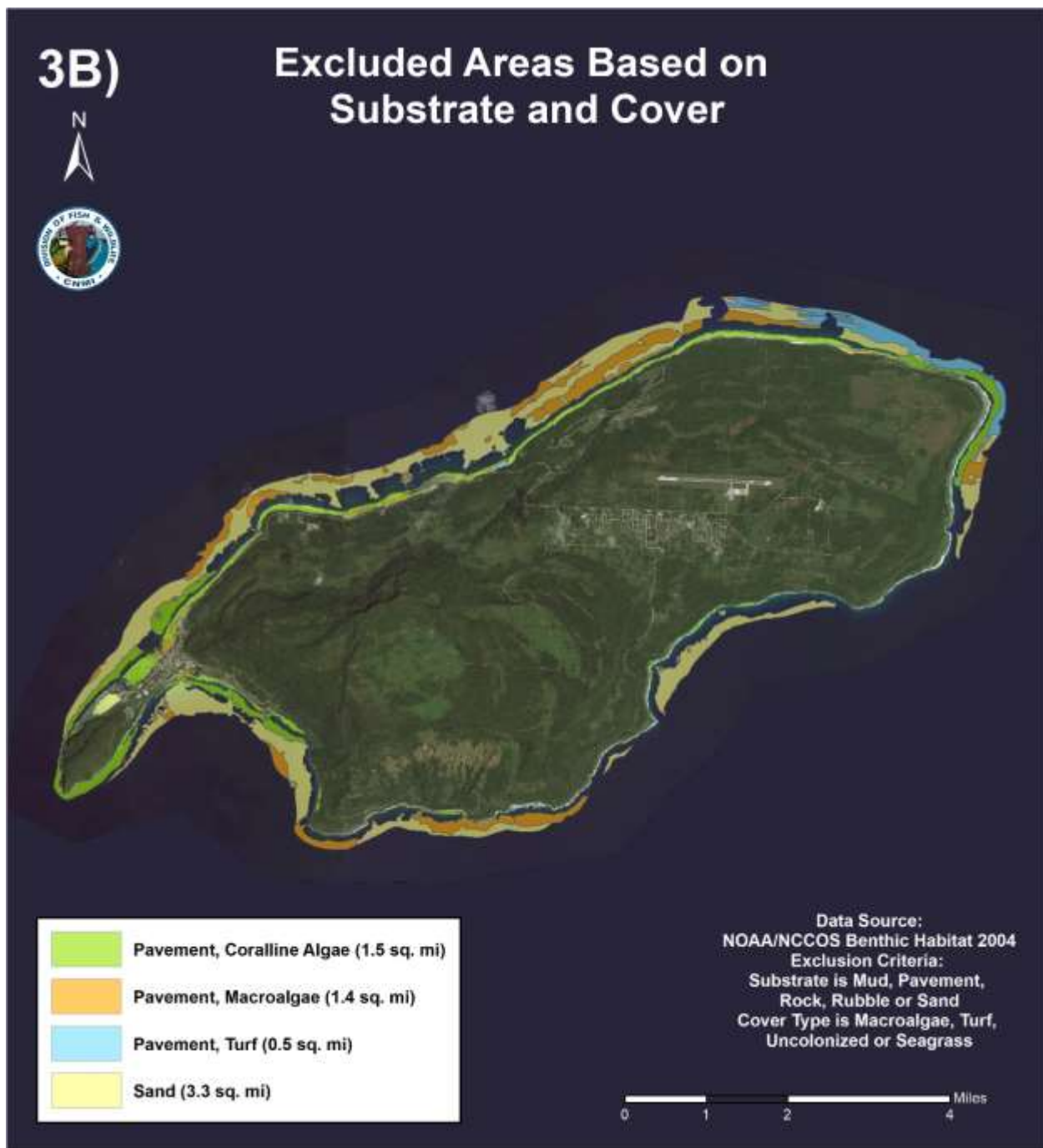


Figure 3b. Rota, Excluded Areas Bases on Substrate and Cover Map.

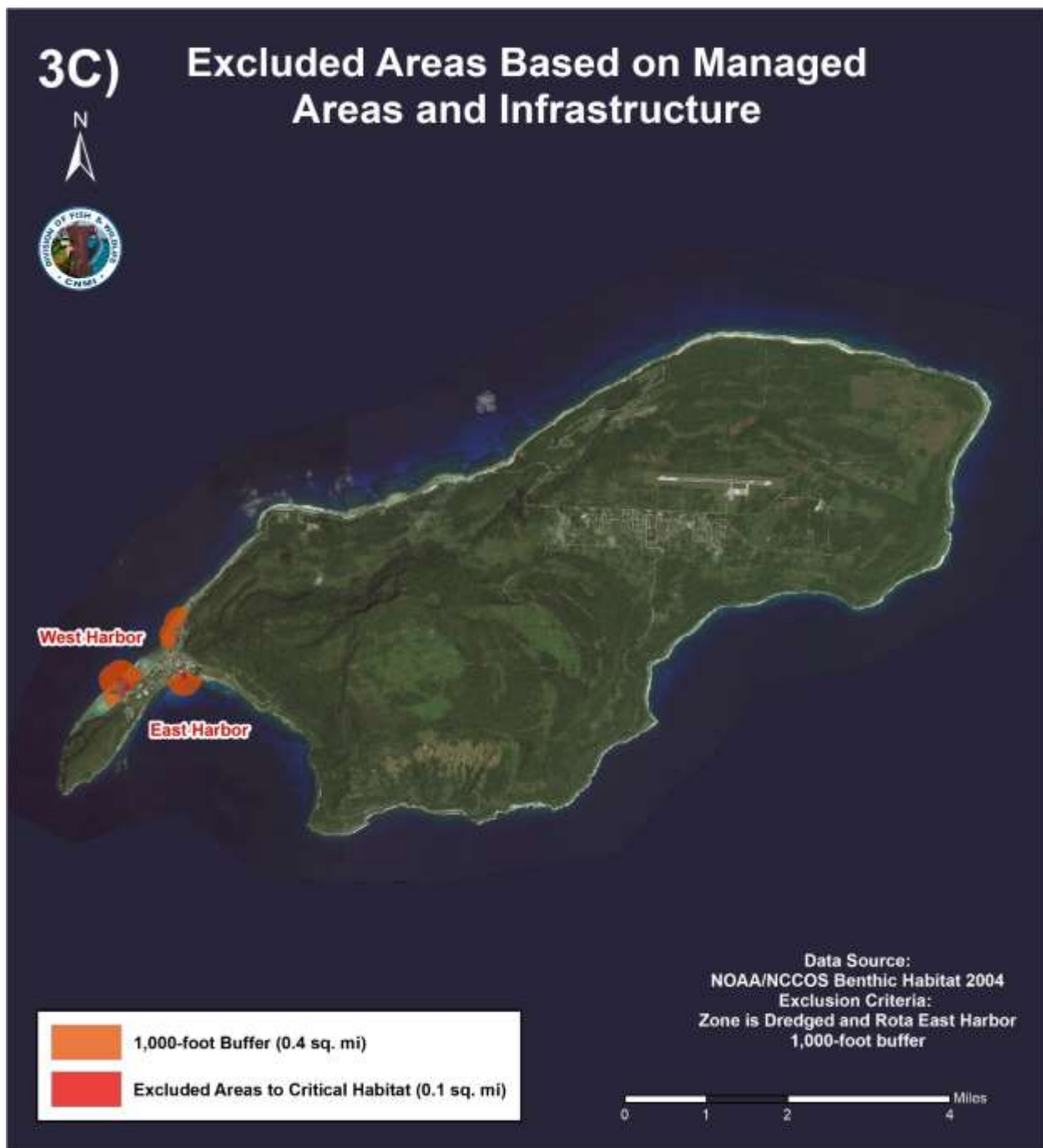


Figure 3c. Rota, Excluded Areas Based on Managed Areas, Infrastructure.

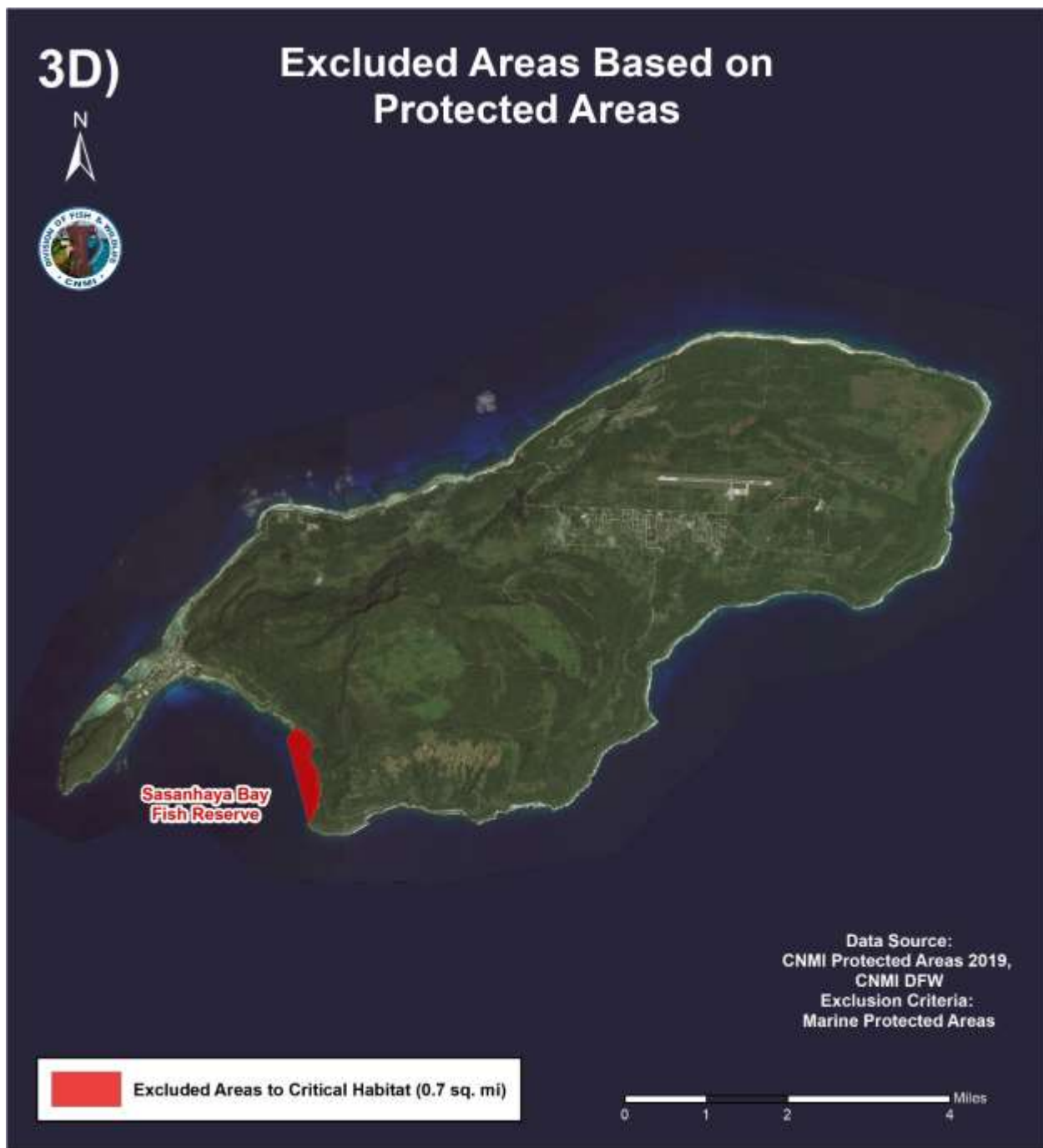


Figure 3d. Rota, Excluded Areas Based on Protected Areas.

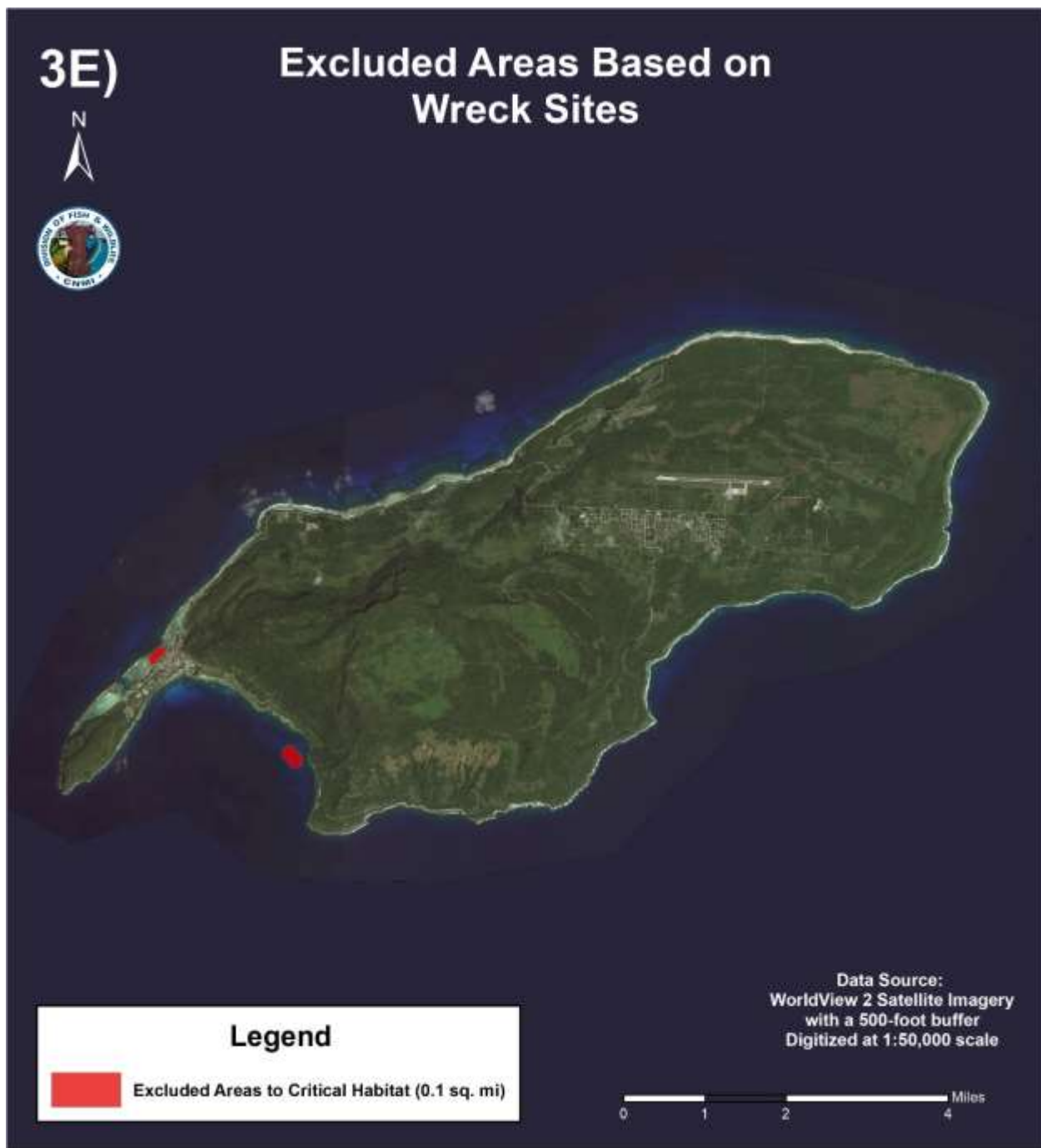


Figure 3e. Rota, Excluded Areas Based on Wreck Sites.

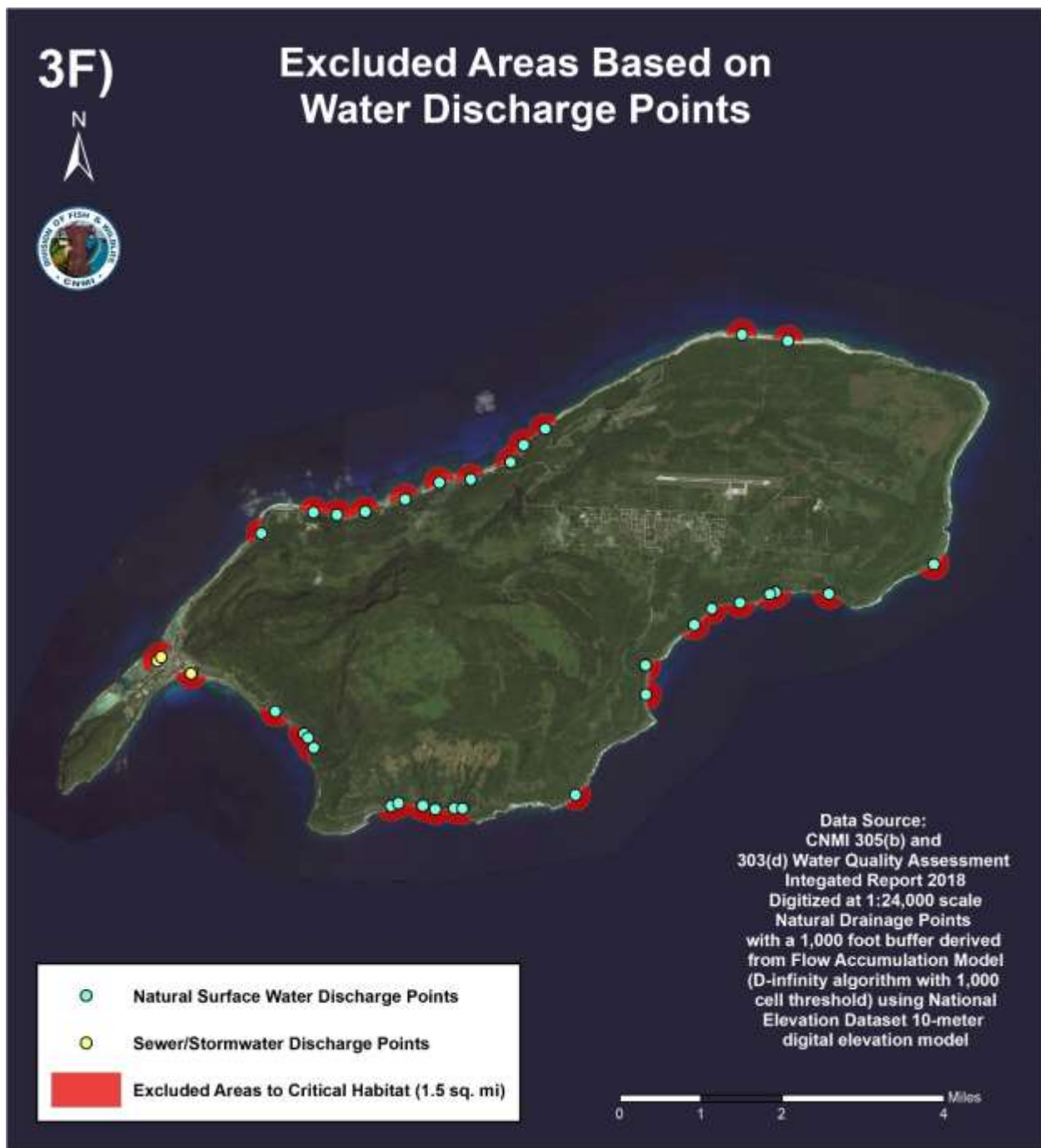


Figure 3f. Rota, Excluded Areas Based on Water Discharge Points.



Figure 3g. Rota, Combined Exclusion Areas.

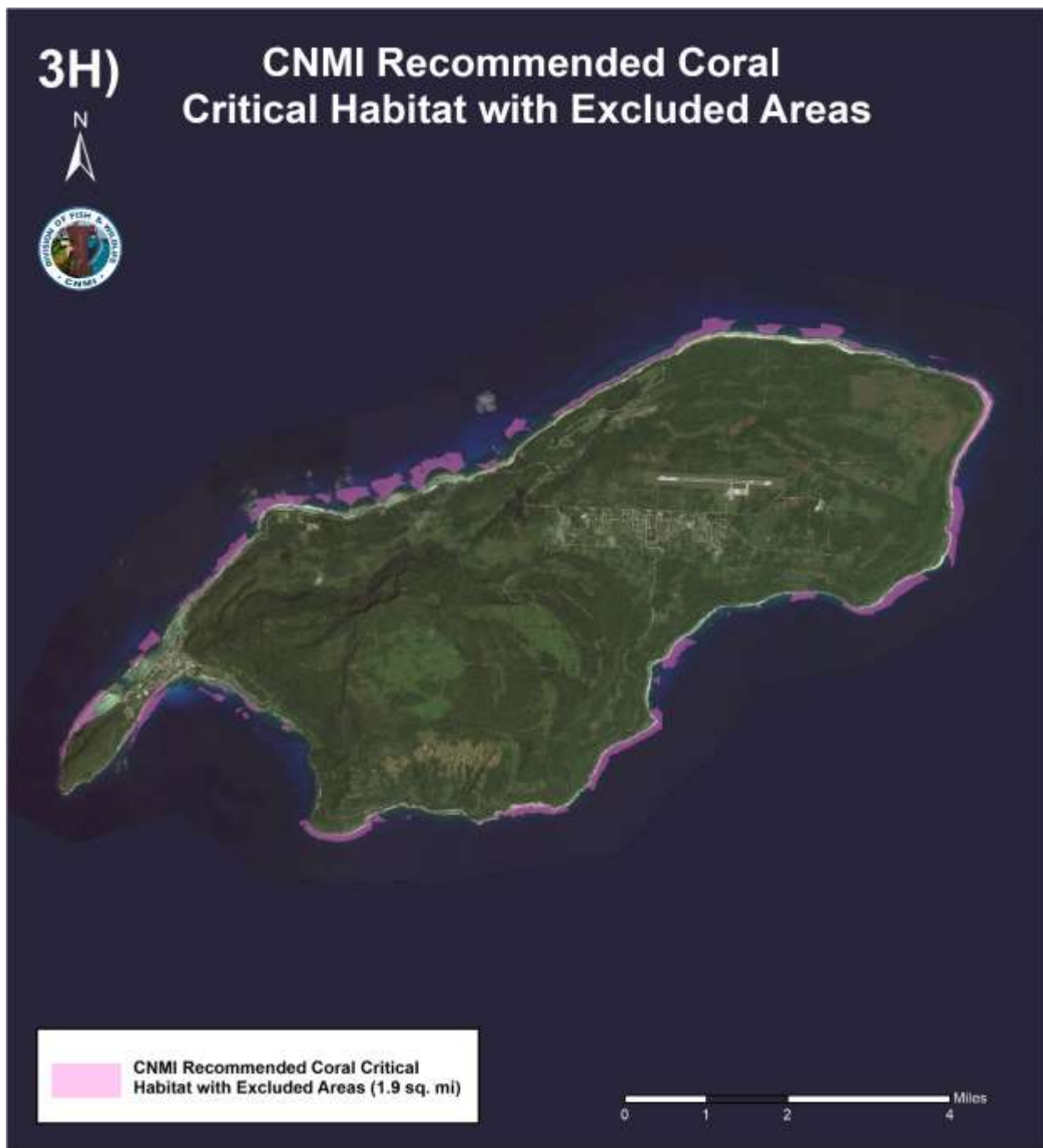


Figure 3h. Rota, CNMI Recommended Coral Critical Habitat with Excluded Areas.



Figure 4a. Aguijan, NOAA Proposed Coral Critical Habitat Map.

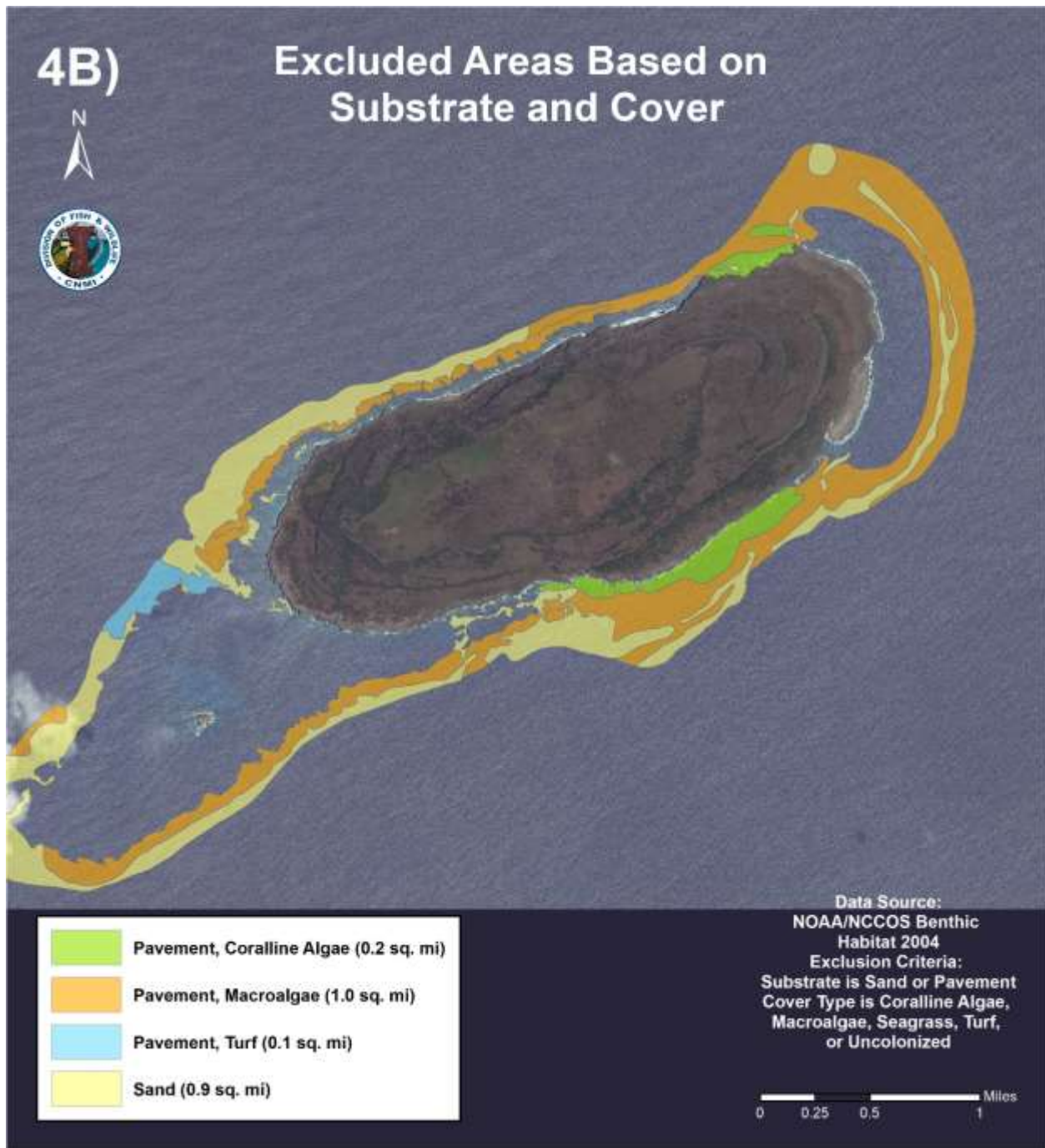


Figure 4b. Aguijan, Excluded Areas Bases on Substrate and Cover Map.

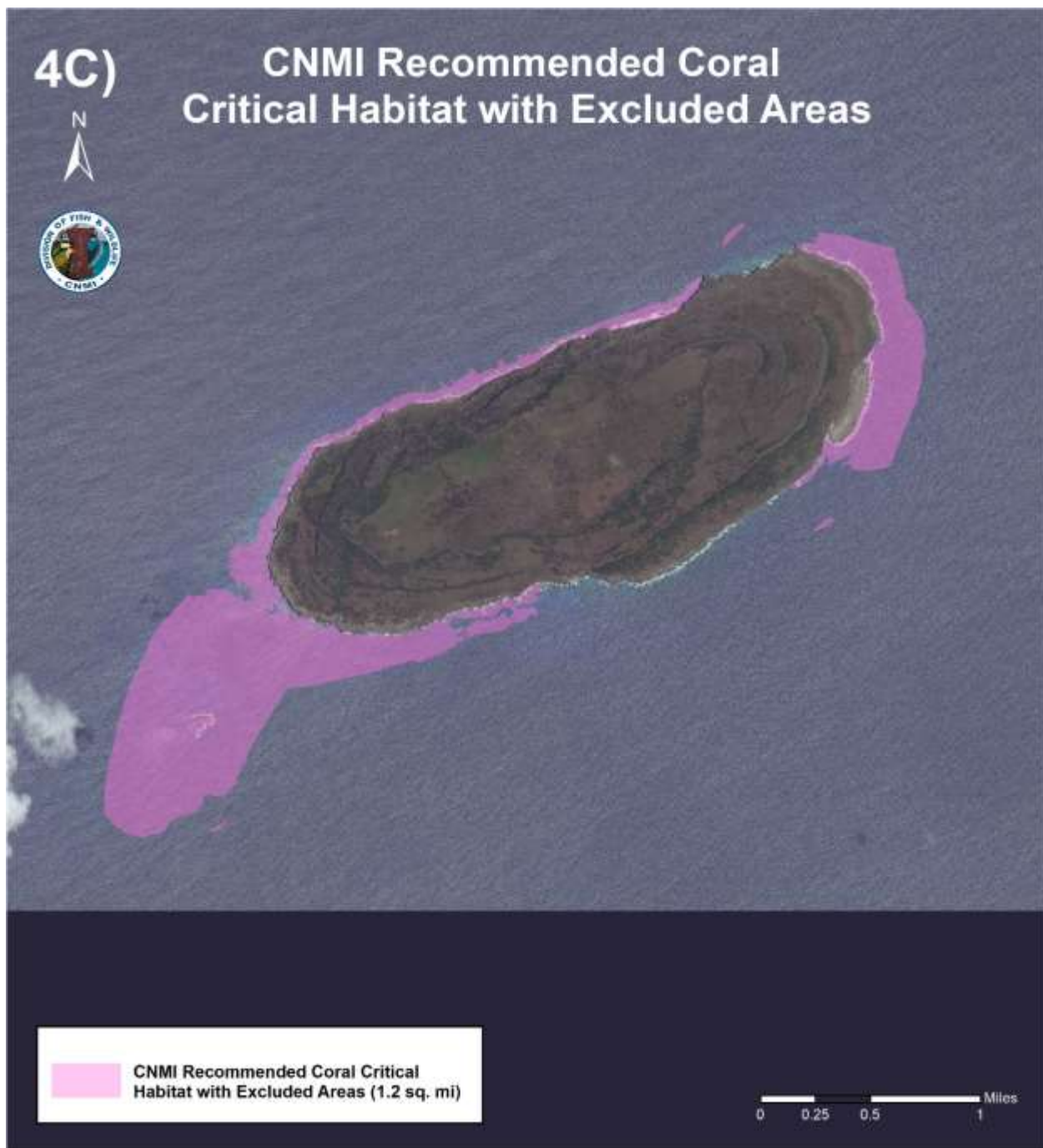


Figure 4c. Aguijan, CNMI Recommended Coral Critical Habitat with Excluded Areas.



Figure 5a. Anatahan, NOAA Proposed Coral Critical Habitat Map.

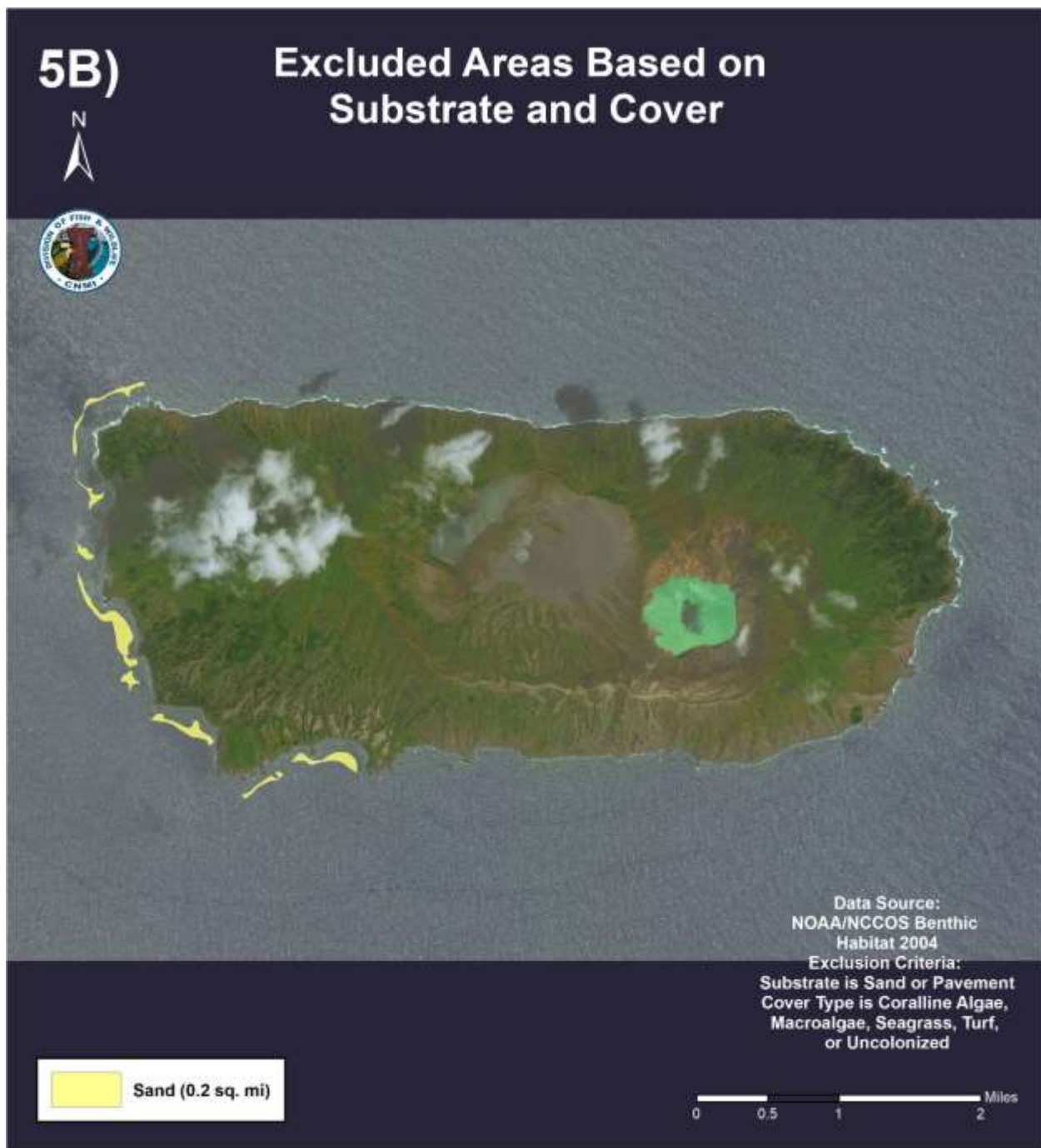


Figure 5b. Anatahan, Excluded Areas Bases on Substrate and Cover Map.

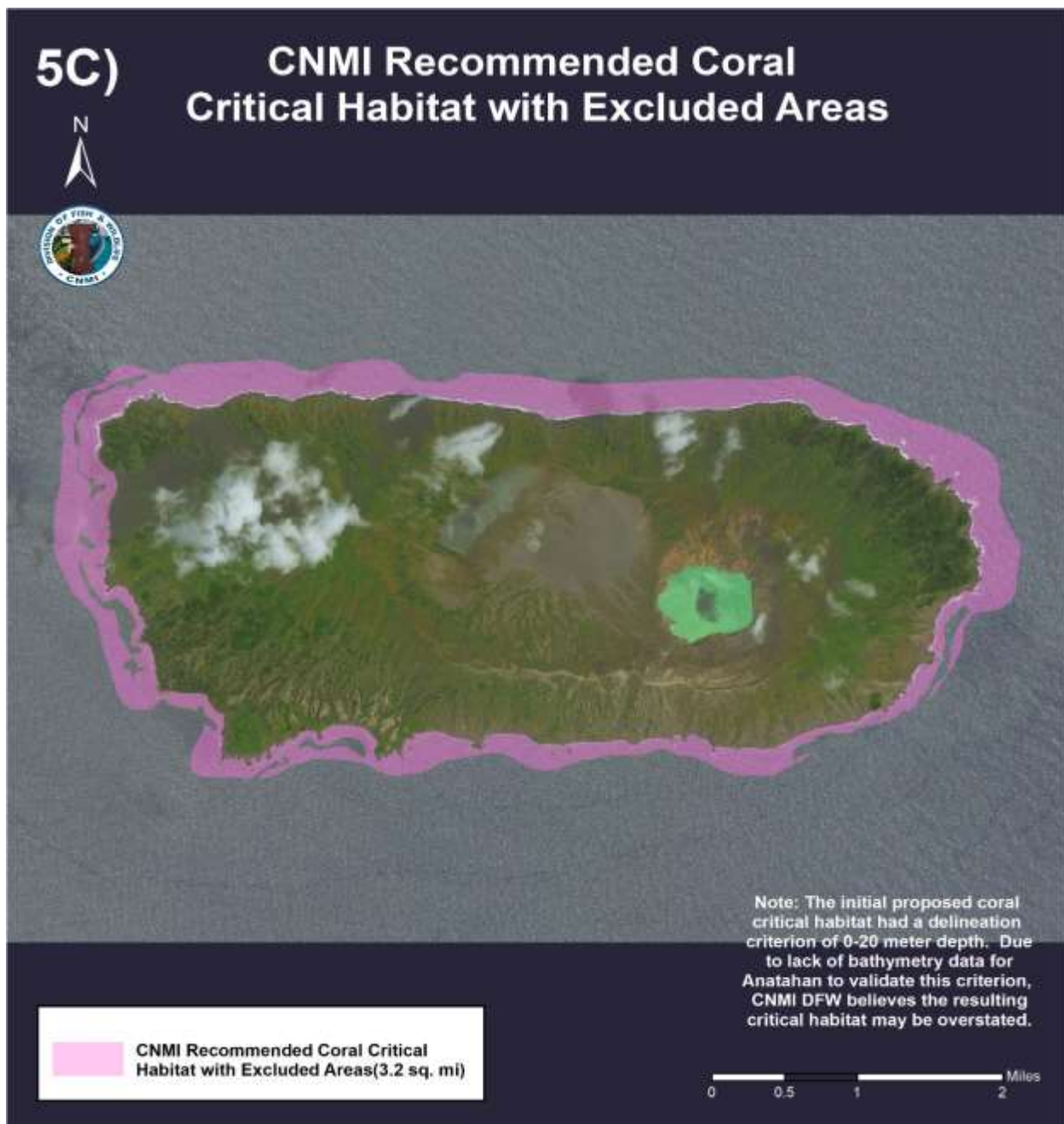


Figure 5c. Anatahan, CNMI Recommended Coral Critical Habitat with Excluded Areas.



Figure 6a. Pagan, NOAA Proposed Coral Critical Habitat Map.

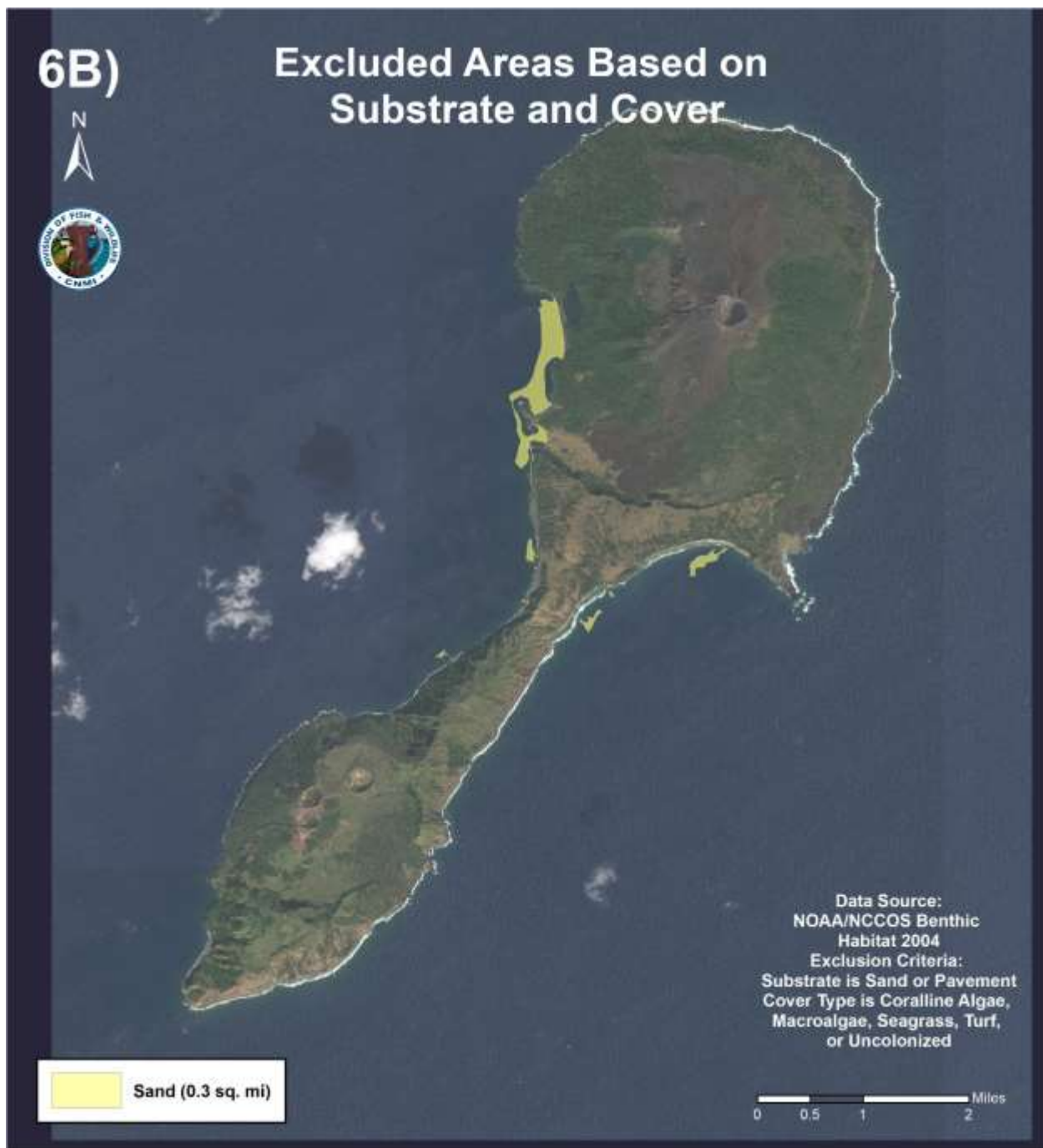


Figure 6b. Pagan, Excluded Areas Based on Substrate and Cover.



Figure 6c. Pagan, Excluded Areas Based on Managed Areas.

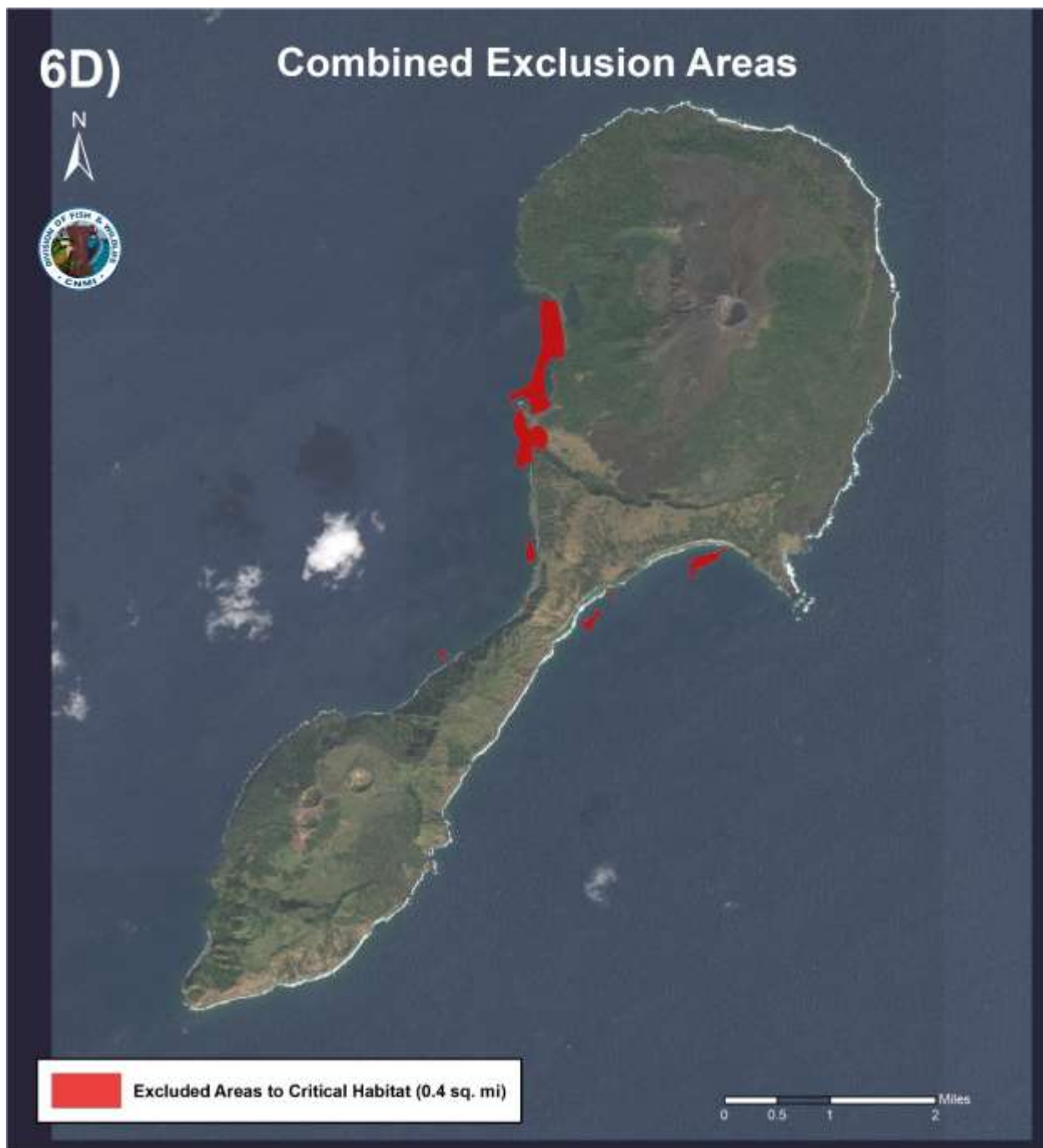


Figure 6d. Pagan, Combined Exclusion Areas Map.

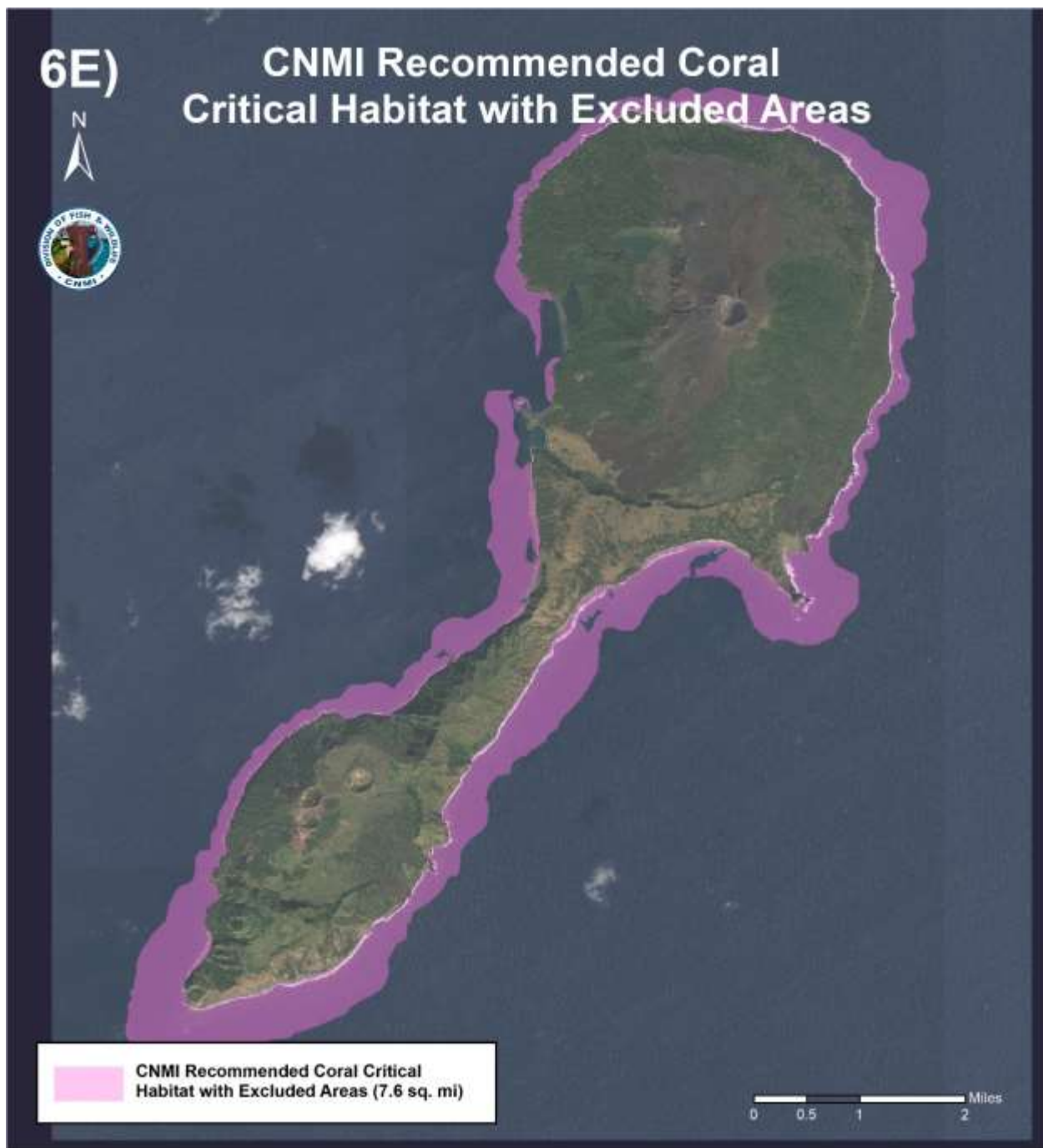


Figure 6e. Pagan, CNMI Recommended Coral Critical Habitat with Excluded Areas Map.

Exclusion Criteria					
Island	Benthic Habitat	Managed Areas and Existing Infrastructure	Protected Areas	Impaired Waters or Water Discharge Points	Wrecks
Aguiguan	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	N/A	N/A	N/A	N/A
Anatahan	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	N/A	N/A	N/A	N/A
Pagan	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	West and east harbor shorelines with a 1,000-foot buffer.	N/A	N/A	N/A
Rota	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Zone is Dredged and Rota East Harbor, with a 1,000-foot buffer	CNMI Protected Areas, CNMI DFW 2019 - only areas that are actively managed as marine protected areas.	CNMI 305(b) and 303(d) Water Quality Assessment Integrated Report 2018. Digitized at 1:24,000 scale. Natural Drainage Points with a 1,000 foot buffer derived from Flow Accumulation Model using ArcGIS (D-infinity algorithm with 1,000 cell threshold) using National Elevation Dataset (10-meter resolution) digital elevation model.	WorldView 2 Satellite Imagery with a 500-foot buffer. Digitized at 1:24,000 scale.
Saipan	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	NOAA/NCCOS Benthic Habitat 2004 (exclusion criteria: Zone = Dredged) and existing structures (Managaha pier, Tanapag boat launch, Lao Lao boat launch) with a 1,000-foot buffer.	CNMI Protected Areas, CNMI DFW 2019 - only areas that are actively managed as marine protected areas.	CNMI 305(b) and 303(d) Water Quality Assessment Integrated Report 2018 Class A Waters and Drainage Points from National Hydrography Data 2017 with a 1,000-foot buffer. Digitized at 1:24,000 scale.	Coordinates from CNMI Historic Preservation Office and wrecks digitized from WorldView imagery (1:24,000 scale) with a 500-foot buffer.
Tinian	NOAA/NCCOS Benthic Habitat 2004. Exclusion Criteria: Substrate is Sand or Pavement and Cover Type is Coralline Algae, Macroalgae, Seagrass, Turf, or Uncolonized	NOAA/NCCOS Benthic Habitat 2004 (exclusion criteria: Zone = Dredged) with a 1,000-foot buffer.	N/A	Natural Drainage Points with a 1,000 foot buffer derived from Flow Accumulation Model using ArcGIS (D-infinity algorithm with 1,000 cell threshold) using National Elevation Dataset (10-meter resolution) digital elevation model.	WorldView 2 Satellite Imagery with a 500-foot buffer. Digitized at 1:24,000 scale.

Table 1. CNMI Exclusion Criteria and Mapping information.