

合作更迭： 冲绳军事基地重整策略

COOPERATIVE SUCCESSION: STRATEGIC MILITARY BASE REALIGNMENT IN OKINAWA

1 引言：超越边界的军事基地影响

冲绳本岛是一个远离日本本土的偏远岛屿，作为美国在第一岛链上的军事防线边缘，政治上对维持日美同盟关系具有重要意义，其地理位置也有利于美军对太平洋国家迅速采取军事行动。作为日本五大岛屿^①中面积最小、人口最少的岛屿，冲绳本岛仅占日本国土面积的0.6%，却承载了70%的驻日美军基地以“维护日本安全”。^[1]这些军事基地和训练场馆占据该岛总面积的五分之一，给岛屿环境及岛上居民带来了诸多挑战。

第二次世界大战的冲绳岛战役后，日本投降，美国军事部门接管了冲绳本岛。此后，美军基地开始扩张并占领了更多冲绳本岛土地。1972年，在日本政府的干预下，历经27年美国统治的冲绳本岛终于回归日本。^[2]然而直至近年，日美联合委员会才提出军事基地重整计划，且忽视了冲绳原住民的意愿。尽管冲绳特别行动委员会（SACO）分别于1996年和2013年出台了两项针对冲绳美国军用设施的重整计划，但冲突和摩擦依然暗潮涌动（图1）。

美军基地的影响突破基地边界，向外波及更大的地域范围，威胁着冲绳本岛的生态、社会和文化安全（图2）。该岛北侧有一片生物多样性丰富的广袤森林，但鱼鹰战机的训练以及森林附近建造的直升机停机坪扰乱了林中野生动植物的栖居。基地迁移和填海工程亦对海洋生物群落及其栖息地造成了破坏（图3）。噪声污染和多发的基地事故还严重影响了周边居民的生活。从军事基地冲蚀而来的裹挟着红色土壤^②的径流损伤了作为岛屿保护伞的珊瑚，继而扰乱了整个珊瑚生境及

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摘要

自冲绳岛战役和二战结束以来，作为日本五大岛屿之一的冲绳本岛一直是美国武装部队的战略要地。驻日美军基地中约有70%位于冲绳本岛，占据整个岛屿面积的五分之一，并使其暴露于各种社会-生态的威胁之中。这种高度军事化带来的社会-生态影响遍布整个岛屿，并未受限于军事基地边界，污染和破坏了当地居民和野生动植物赖以生存的生态系统。鉴于目前关于冲绳本岛军事基地重整问题依然争论不休，本研究提出以景观为媒介的替代重整策略来应对上述挑战，并针对即将到来的2022年（冲绳回归日本50周年）概述了4项策略，以期在自然、冲绳原住民和美军基地之间建立起生态共生关系，并加强军事化岛屿景观的自持续性。

关键词

冲绳本岛；意愿；土著社区；军事基地重整；景观策略

ABSTRACT

Since the Battle of Okinawa and the end of World War II, Okinawa Island, one of the five main islands of Japan, has been a critical strategic location for the United States Armed Forces. Approximately 70% of the U.S. military bases in Japan are located on Okinawa Island. The bases cover one-fifth of the total Island area and expose Okinawa to various social-ecological vulnerabilities. Being unconstrained by the military base border, the social-ecological impacts of this highly militarized reality could be observed across the Island, and contaminates and disturbs ecological systems crucial for local residents and wildlife. Within the context of the ongoing debate over the military realignment on Okinawa Island, this study responds to the aforementioned challenges by proposing a landscape-based alternative realignment strategy. In particular, with the upcoming 50th anniversary of Okinawa's reversion to Japan in 2022, this work outlines four strategies for establishing an ecological symbiosis between nature, the indigenous Okinawan, and the U.S. military bases, and strengthening self-sustainability on a militarized island landscape.

KEYWORDS

Okinawa Island; Will; Indigenous Community; Military Base Realignment; Landscape Strategies

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- ① 日本五大岛屿包括北海道本岛、本州岛、九州岛、四国岛和冲绳本岛。
- ② 红色土壤是冲绳本岛上主要的土壤类型。因其流失造成的海洋污染和淤泥严重影响珊瑚群的生存。

依附其上的生态系统，最终影响整个冲绳本岛（图4）。由于缺乏防范措施，基地产生的污染经由自然力和市政水网等基础设施扩散至整个岛屿，并进一步影响到人口稠密的下游地区（图5）。^[3]

美军自认为扮演着维护日本安全与日美同盟关系的角色，罔顾驻军造成的生物多样性丧失的后果。SACO在1996年和2013年出台的军事基地归还与迁移计划中仅仅考虑了军队操作的便利性，对冲绳民众意见的回应则显得含糊其辞（图6）。例如，作为冲绳本岛的另一掌权势力的日本中央政府，无视原住民公投的意见，批准空军基地从人口稠密的宜野湾市迁往人口较少的名护市边野古，甚至为安置空军基地而围海造地，致使沿海和海洋生态系统退化，其中包括了《国际自然保护联盟濒危物种红色名录》中的易危物种儒艮（*Dugong dugon*）的繁殖地。事实上，美军势力遍布全球，其为当地带来的问题在其他偏远军事岛屿中数见不鲜。^[4]

2 挑战与机遇：拆解社会和自然的复杂性

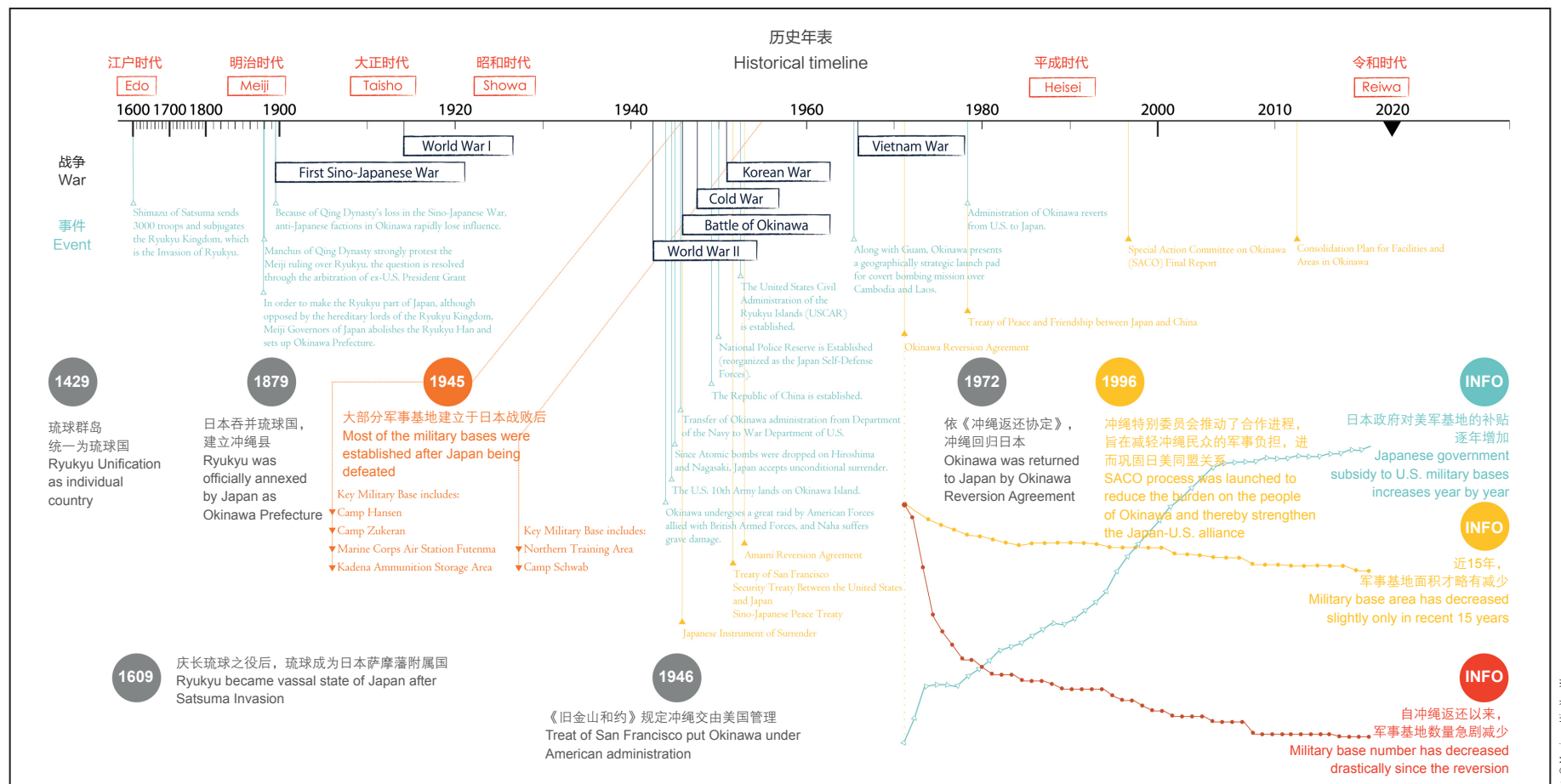
2.1 利益相关者视角：美军、冲绳原住民和日本本土人

阿伊努人和冲绳人是日本的两个土著民族，分别居住在日本的最

北端和最南端。^[5]其中，冲绳人拥有自己的礼法、语言和文化，并与祖地紧密连结在一起。然而，美军基地占领并摧毁了他们的家园，开发并污染了他们的自然资源——这些行为干涉了冲绳人的继承权和自主权，侵犯了他们本应拥有的土著权利。尽管有来自国际的压力和联合国的建议，日本政府仍然拒绝承认冲绳人的土著权利。^[6]2007年，日本正式批准《联合国土著人民权利宣言》，北海道阿伊努人的土著身份终获认可。阿伊努人的社会地位也因此大幅提升，社会经济限制随之减少，并享有了更多国家机关提供的体制利益。^[7]同样地，如果冲绳人的土著身份得到承认，那么他们将在国际谈判中享有更大的自治权和交涉权。

而在日本本土人眼中，冲绳人是“劣等外国人”。^[8]二战期间，冲绳人被迫作出重大牺牲，自1945年冲绳岛战役后，美国占领冲绳本岛长达27年。甚至在1971年签署回归协议后，日本政府也不愿将美军基地迁离冲绳本岛。由于军事基地占据了冲绳本岛的大部分地区，岛上经济发展饱受阻碍。20世纪90年代，为促使县域发展更加平衡，冲绳本岛中部的中城湾港新港地区（现宇流麻市）被列为日本第一个经济特区。^[9]然而，将冲绳转变为与亚洲其他国家地区贸易物流枢纽的这一努力仍以失败告终。^[10]最近，日本本土方面正尝试通过旅游开发来充分发掘冲绳本岛的资源，将该岛塑造为旅游度假胜地，以提振当地经济。^[11]

- 1. 冲绳本岛美军基地发展历史年表
- 1. The timeline of U.S. military bases on Okinawa Island



2.2 现行搬迁计划和虚构视角

1996年，SACO推动了合作进程，旨在减轻冲绳民众的军事负担，进而巩固日美同盟关系。^[12]委员会依照《美日安全保障条约》和其他相关协议，制定了重整、合并、削减美军设施，以及调整驻冲绳美军作战程序的计划。但是，冲绳居民对该计划并不满意。2013年，美国和日本政府又共同起草了修订后的重整合并计划（即《冲绳驻日美军设施、区域合并计划》），以加强日、美公众对日美同盟的支持，并促使美军部队及其设施能够持续占据日本。这两项计划无一例外地遭到了当地人反对，然而日本政府却坚持实施。^[13]

基于以上背景，本研究从虚构视角出发，设想2022年——冲绳回归日本50周年之际，这个偏远岛屿的景观将承受来自美军基地的严重污染和不断加剧的局部冲突。研究希望借此提出以景观为媒介的替代重整策略来应对这些挑战。通过分析海洋生态、陆地野生动植物，以及涉及的民生问题，策略确定了7个关键的岛上军事基地（图7）；鉴于这些基地社会/生态环境存在差异，将其分为三组，各组的重整计划将分阶段实施。

第一组为占用了大片林地且不易迁移的军事基地，为其制定的是保护伙伴关系策略。第二组是造成了噪声污染的空军基地和严重水土污染的营地，为其制定的是遵照环境保护方针的基地迁移策略。第三组即迁移后留下的退役基地，为其制定的是植物修复策略。研究建议实施迁移的军事基地包括普天间海军陆战队航空基地、嘉手纳空军基地和瑞庆览营（福斯特营）；而施瓦布营、汉森营、嘉手纳弹药储存区和占有大片的林地训练场的北部训练区，则建议采取保护伙伴关系策略，以避免双重污染（图8）。

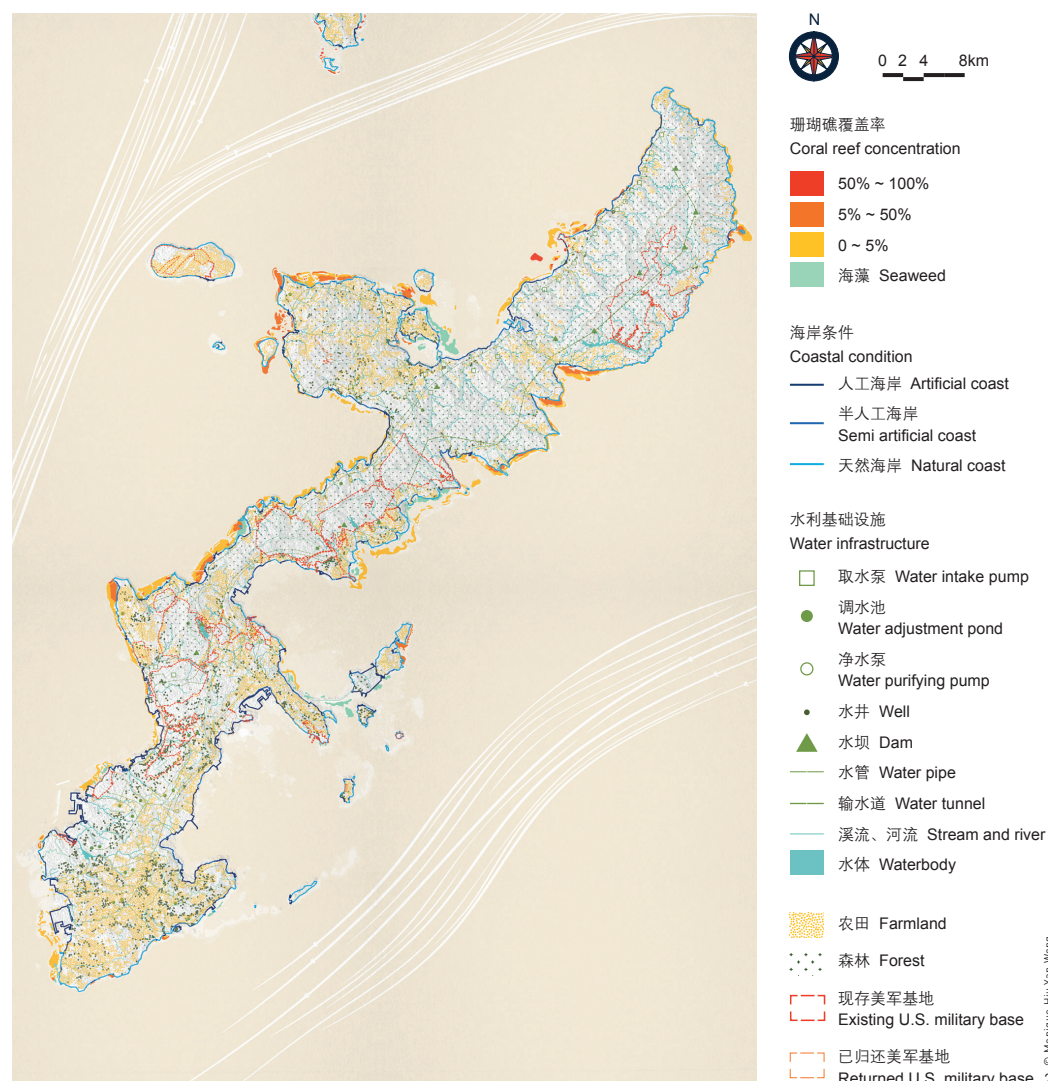
3 战略性重整：景观策略

3.1 策略一：保护伙伴关系

针对占用大面积土地、几乎不可能迁移的林地型军事基地，推荐采取保护伙伴关系策略。不久的将来，日本将遵循联合国的提议承认冲绳人的土著身份，使其土著权力获得尊重与重视。日、美两国政府也将签署支持冲绳原住民与美军伙伴关系的协议。如此，冲绳原住民可种植新鲜的当地农产品，并在农贸市场中售卖给军队。鱼鹰训练和实弹演练等军事活动则会被限制在河流缓冲区外，从而确保河流生态环境免受污染。这一策略既保护了本土景观，也保障了冲绳原住民继续利用本地资源耕作、生活的权利。在这一保护伙伴关系的策略支持下，军方仍然可以管理、统筹基地地区，以抑制日本本土发展旅游业和过度开发资源，同时允许冲绳原住民使用并保护其祖地（图9）。

3.2 策略二：迁移蓝图

迁移蓝图旨在确定能够最大程度减少基地迁移负面影响的潜在迁址。在选址方面，迁移后的军事基地应与人口稠密区保持距离，避免



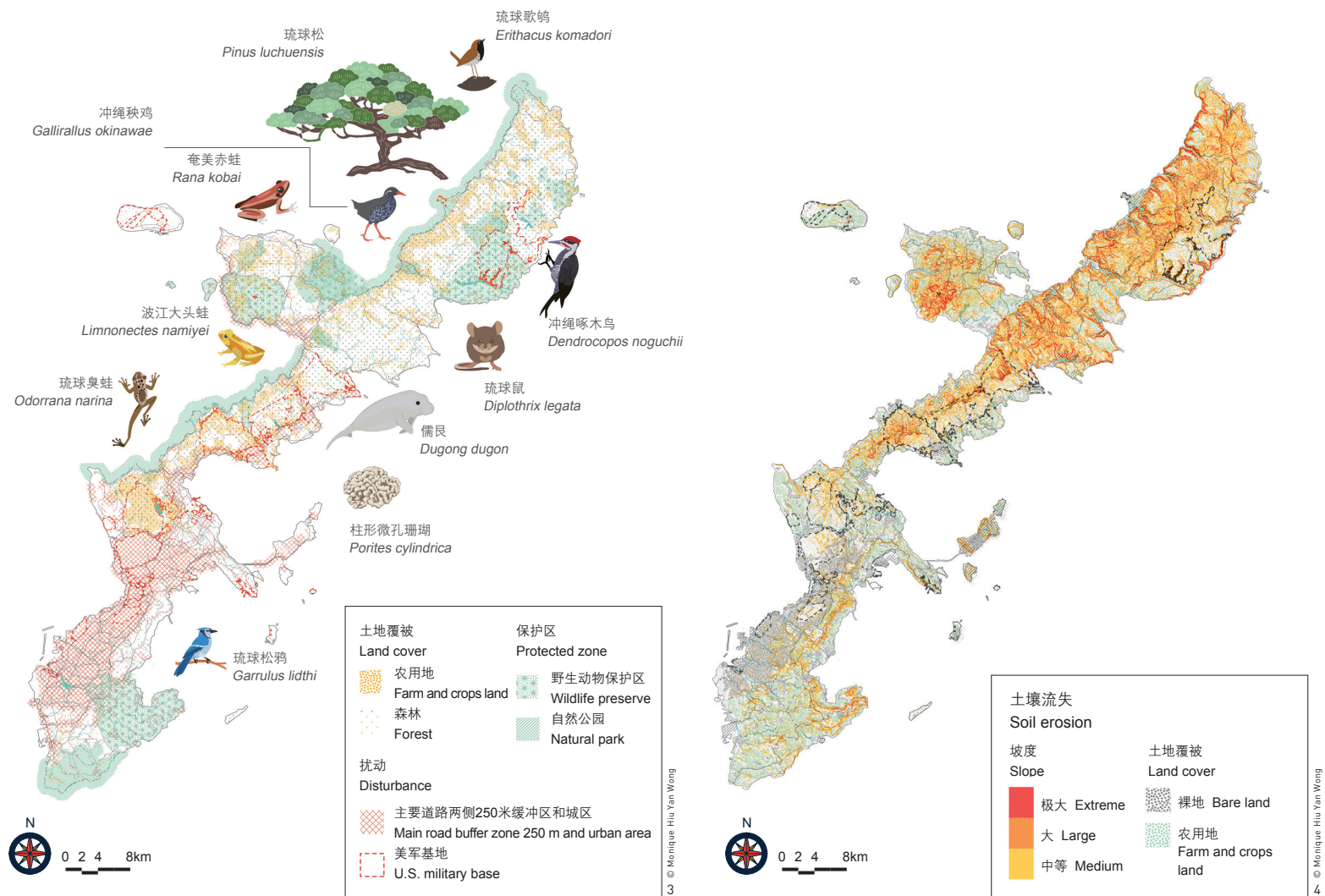
干扰和污染岛民的生活环境，尤其应避免濒危物种栖息地和珊瑚礁等庇护着大量海洋生物的生境。鉴于冲绳本岛的水源地集中在北部，大多通过配水管网输送至岛屿中部和南部，因此迁址宜选在岛屿南部，以尽可能地减少通过管网系统传输军区污染的风险；而且洋流又可以迅速冲走军事基地产生的污水，从而稀释污染物浓度。另外，每个基地都必须建造污水处理厂，再生水可用作生产与其他用途（图10）。

3.3 策略三：传承文化的植物修复

植物修复策略与迁移蓝图同步执行，即修复将从基地迁移前持续至成功迁离后。具体策略是在此种植可吸收、储存水土中有毒物质的本土植物；并按季节采收、提取植物中的色素用于制作红型（冲绳的一种传统染色技法），从而为当地传统工艺提供原材料。其中，可以提取染料的植物包括板蓝（*Strobilanthes cusia*）、菲岛福木（*Garcinia subelliptica*）、苏木（*Biancheae sappan*）、杨梅

2. 驻冲绳美军基地与环境背景
2. U.S. military bases on Okinawa and the associated environmental issue

3. 野生动植物保护分析
4. 土壤流失分析。红色土壤覆盖全岛，陡坡和裸露地表的土壤更容易遭到侵蚀。
3. Wildlife protection analysis
4. Soil erosion analysis. As red soils cover most surface of the Island, land with steep slope or bare surface is more vulnerable to soil erosion.



(*Myrica rubra*)、朱槿(*Hibiscus rosa-sinensis*)、刺桐(*Erythrina variegata*)和秀贵甘蔗(*Saccharum officinarum*)。收获一茬后便会种植下一轮植物，形成循环。如此，退役基地将很快成为冲绳本岛可持续的文化生产基地(图11)。

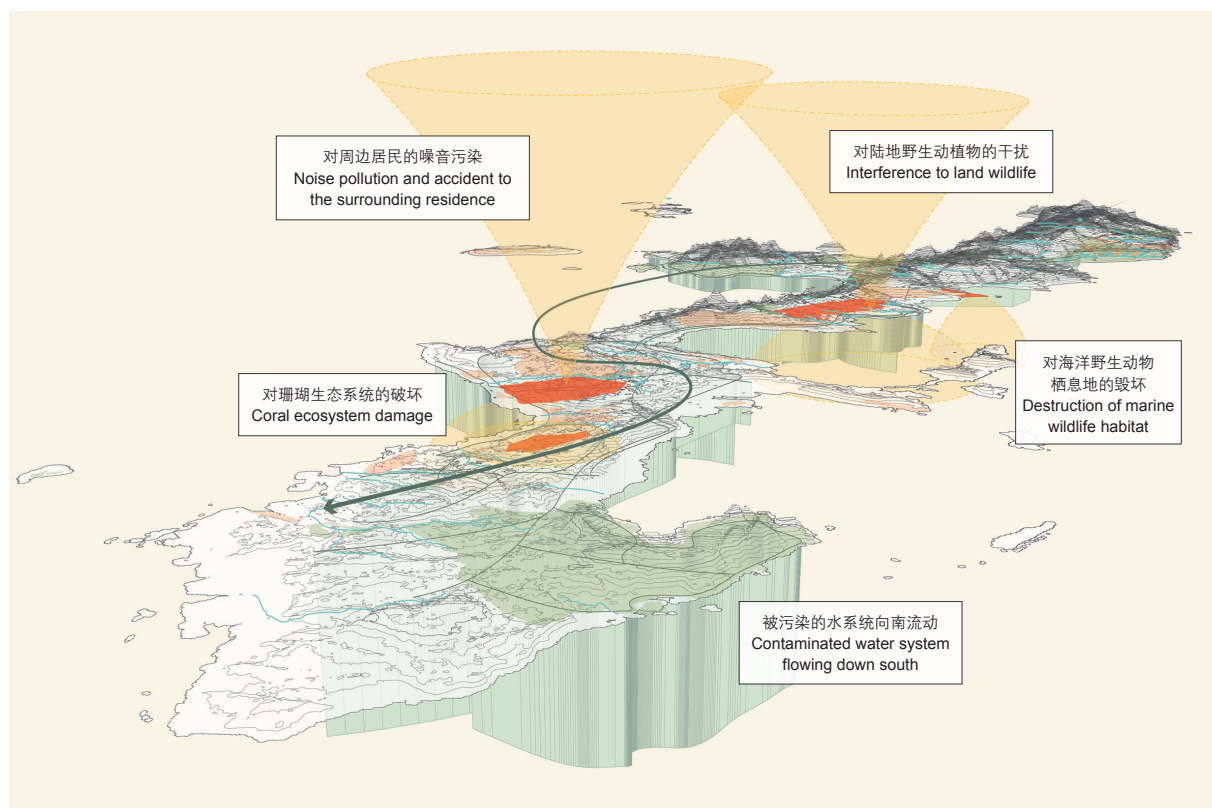
3.4 策略四：土之祭

“土之祭”策略意图在冲绳本岛形成一种新颖的文化形式，以防当地居民与美军之间关系的再次紧张。这一策略设想基于日本本土语境，认为最可持续的规划手段是创造传统习俗来应对基地在空间上的迁移问题。具体而言，针对水土流失严重的地区，在河流中放置小型土壤捕集器，以收集从基地冲蚀而来的红色土壤以防掩埋珊瑚礁。这些捕集器将顺着洋流漂至近海的中央收集器，海军舰艇在训练期间定期收集这些土壤并带回岛上供居民种植农作物。如此，美军士兵也便成为了岛屿守护者，而这一仪式也将很快发展为冲绳本岛上的传统

“祭”(日语的“节日”)，以此表达对自然、冲绳原住民和军队共存现状的接纳(图12)。

4 结论：虚构景观下的另一种未来

外国军事力量对本土景观的影响从来不止在物理空间层面，真正受影响的是潜在的环境、社会和文化层面。当面对国家基本安全保障与当地环境恶化的两难境地时，景观可以充当调解二者矛盾的有力媒介。本研究从虚构视角设想了冲绳本岛军事景观的蓝图，探索了外国军队、自然环境和冲绳原住民共存的另一种未来。项目所展现的具体内容不仅可作为结论性的宣传手段，鼓励景观设计师重新思考冲绳景观的未来，也可作为通俗易懂的人性化声明，促使军事化和去军事化进程中的利益相关者借此反思这一独特的岛屿景观的价值——即当地文化繁荣发展的起源(图13)。**LAF**



- ① The 5 main islands of Japan are Hokkaido, Honshu, Kyushu, Shikoku, and Okinawa Island.
- ② Red soils are dominant on Okinawa Island, whose erosion causes pollution to the sea and the stress to the corals.
5. 美军基地所带来的环境问题。绿色部分代指水污染，纵深越大污染越重（尤其南部）。上方黄色倒锥形代指对天空区域的影响，下方黄色半球形则代指对海洋野生生物的影响。
6. 美军基地归还政策分析
5. Environmental problem overview caused by U.S. military bases. Green extrusion refers to the water contamination, with higher height down south indicating larger contamination. Yellow cones upward refer to the sky area being affected by the activity of military bases, and the hemispheres downward refer to the destruction of marine wildlife.
6. U.S. military base return policy analysis

1 Introduction: Impact beyond the Military Bases

Okinawa Island is a remote island from mainland Japan and is important politically for the maintenance of Japan–U.S. allied relations as a U.S. military frontier in the first island chain. Its geographic location facilitates immediate military action to countries in the Pacific Ocean. Being the smallest and least populated of the 5 main islands of Japan^①, Okinawa Island makes up 0.6% of the nation's land area, but bears an imbalanced burden for Japan's security by hosting 70% of the U.S. military bases in Japan.^[1] Covering one-fifth of the total Island area, these military bases and training sites pose various challenges to the Island and its residents.

After the Battle of Okinawa in World War II, Japan surrendered and the U.S. military department took over the administration of Okinawa Island. Since then, U.S. military bases have started to expand and occupy more and more land on Okinawa Island. After 27 years of U.S. administration, Okinawa Island was returned to Japan in 1972 under the intervention of the Japanese government.^[2] Military base realignment plans were proposed by the U.S.–Japan Joint

Committee only in recent years. However, the realignment plans have neglected the will of the indigenous Okinawan. Although the Special Action Committee on Okinawa (SACO) has issued two realignment plans for the U.S. military installation in 1996 and 2013 respectively, an undercurrent of conflict and friction still persist (Fig. 1).

The influence of the U.S. military bases is not constrained within the base border and instead spreads out to a wider regional context. Moreover, that influence has adversely impacted the Island ecologically, socially and culturally (Fig. 2). The northern side of the Island includes an extensive forest area with great biodiversity. The Osprey aircraft training and the building of helicopter pad near the forest has disturbed the forest wildlife and their habitat. The construction and reclamation of the relocation site also poses adverse impacts on the marine community and destroys their natural habitat (Fig. 3). Noise pollution and frequently occurred base accidents have considerably impacted the surrounding residents. The corals, the protector of the Island, are harmed by the flushing of red soils^② eroded from the military bases. In turn, this flushing disturbs the entire coral

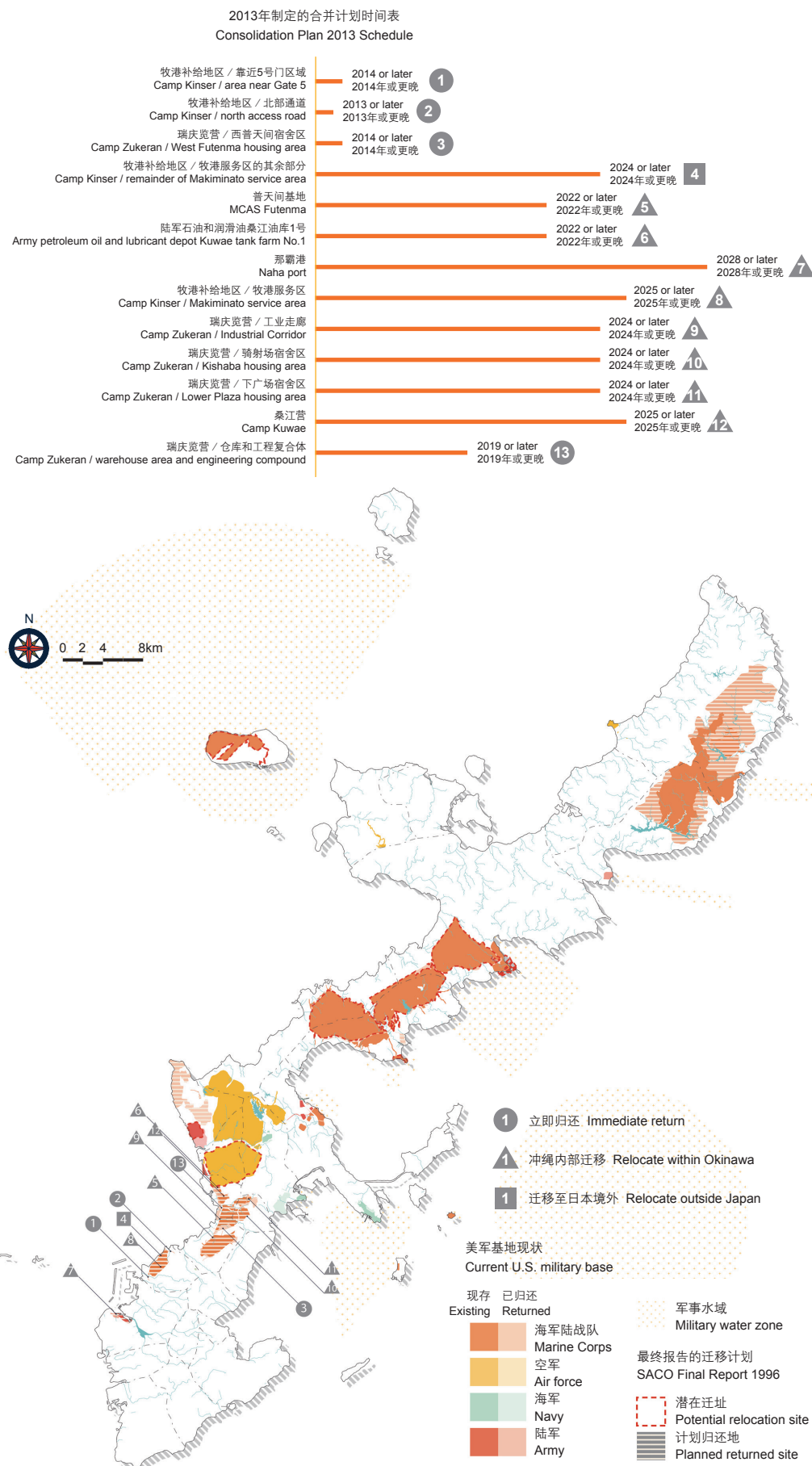
habitat and ecosystem that rely on it and affects the existence of the Island (Fig. 4). Given the lack of preventive measures, contamination generated at the bases spread across the Island through natural processes and infrastructures such as water pipelines, thereby affecting densely populated downstream communities (Fig. 5).^[3]

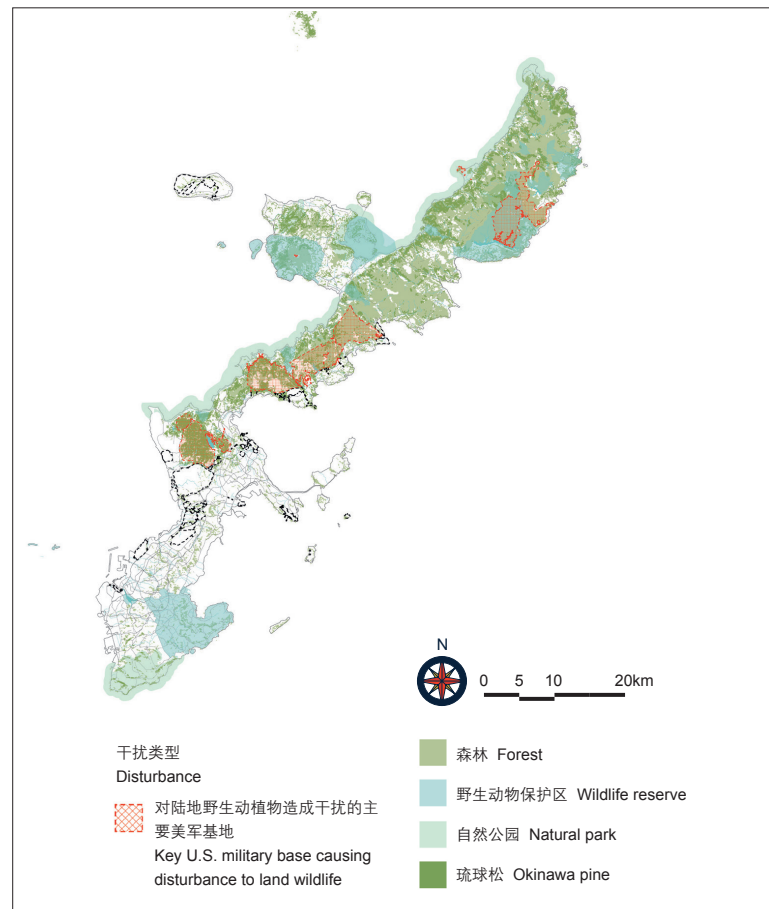
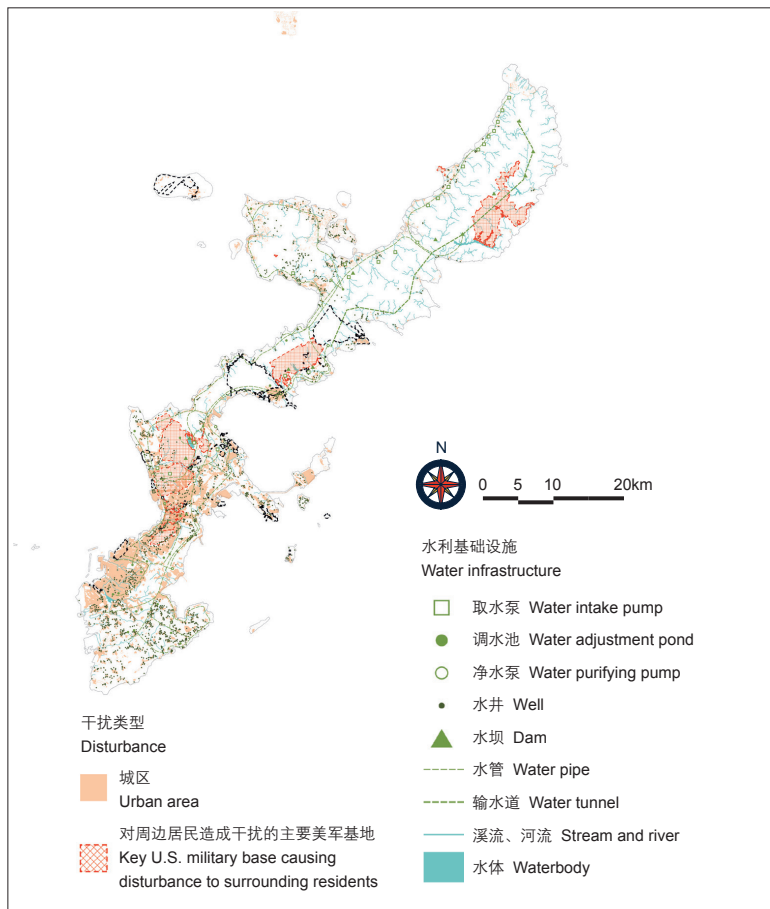
The military perceives its role as maintaining security and performing upkeep of the Japan–U.S. allied relation, regardless of the rich biodiversity loss after their presence. SACO have issued two military base return and relocation plans in 1996 and 2013, but the relocation only considers military operational convenience thus providing a muddled explanation to the Okinawan (Fig. 6). For example, Japan’s central government, which is essentially another occupying power, ignored the indigenous referendum and allowed an airbase to move from the densely populated city of Ginowan to the less populated town of Henoko. The reclamation of coastal land for the relocated airbase degrades coastal and marine ecosystems, including the breeding site of the Dugong (*Dugong dugon*), a vulnerable species under the International Union for Conservation of Nature’s Red List of Threatened Species. The U.S. military has a global reach, and problems pertaining to U.S. military power over indigenous lands could be observed at other remote military islands around the world.^[4]

2 Challenge and Opportunity: Unpacking Social and Natural Complexities

2.1 Perspective from Stakeholders: The Military, the Indigenous Okinawan, and the Japan Mainlanders

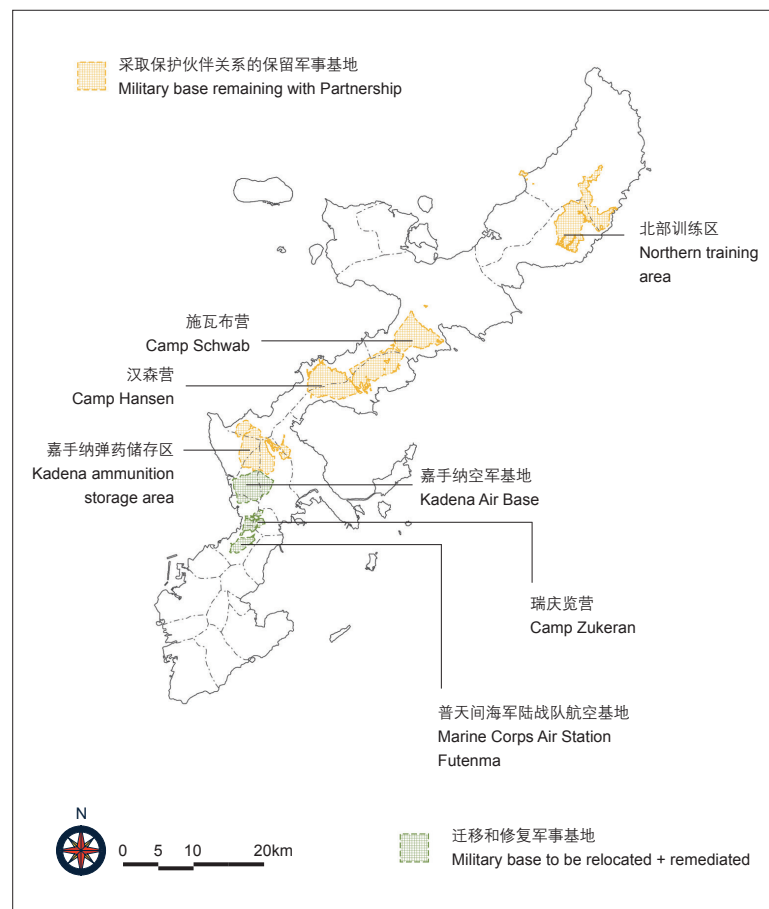
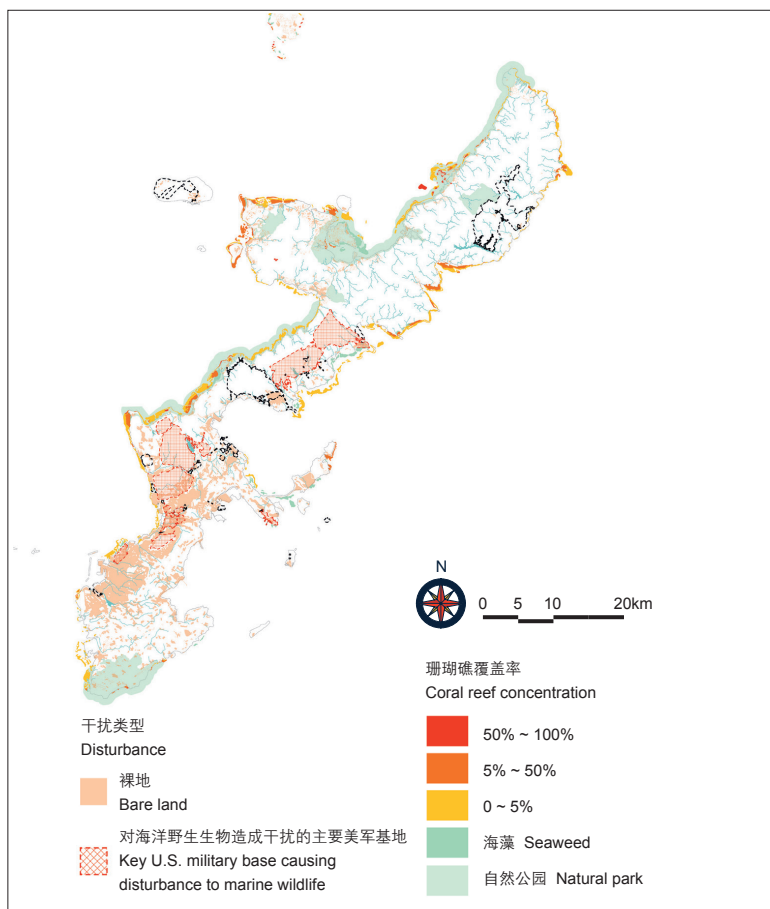
Inhabiting the northernmost and southernmost parts of Japan, respectively, the Ainu and Okinawan are the two indigenous groups of peoples in Japan.^[5] Okinawans have their own rituals, language, and culture, and maintain a close relationship with their ancestral land. The military bases occupy and destroy their homeland and exploit and pollute their natural resources. This situation adversely affects the inheritance and self-determination of the Okinawans and infringes the indigenous right that they should have. Despite the international pressure and the UN recommendation, the Japanese government continues to refuse to recognize the Okinawans’ indigenous rights.^[6] In 2007, Japan ratified the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and subsequently recognized the Ainu people in Hokkaido as an indigenous people of Japan. The social status of the Ainu largely increased, their





7. 美军基地造成的环境破坏对周边居民、陆地及海洋野生生物的影响 (图7-1至7-3); 叠加所得的美军基地重整优先级 (图7-4)

7. Analysis showing environmental disturbance to surrounding residents, and land and marine wildlife caused by U.S. military bases (Fig. 7-1 to 7-3); Resulting military base realignment priority by overlaying analyses (Fig. 7-4)

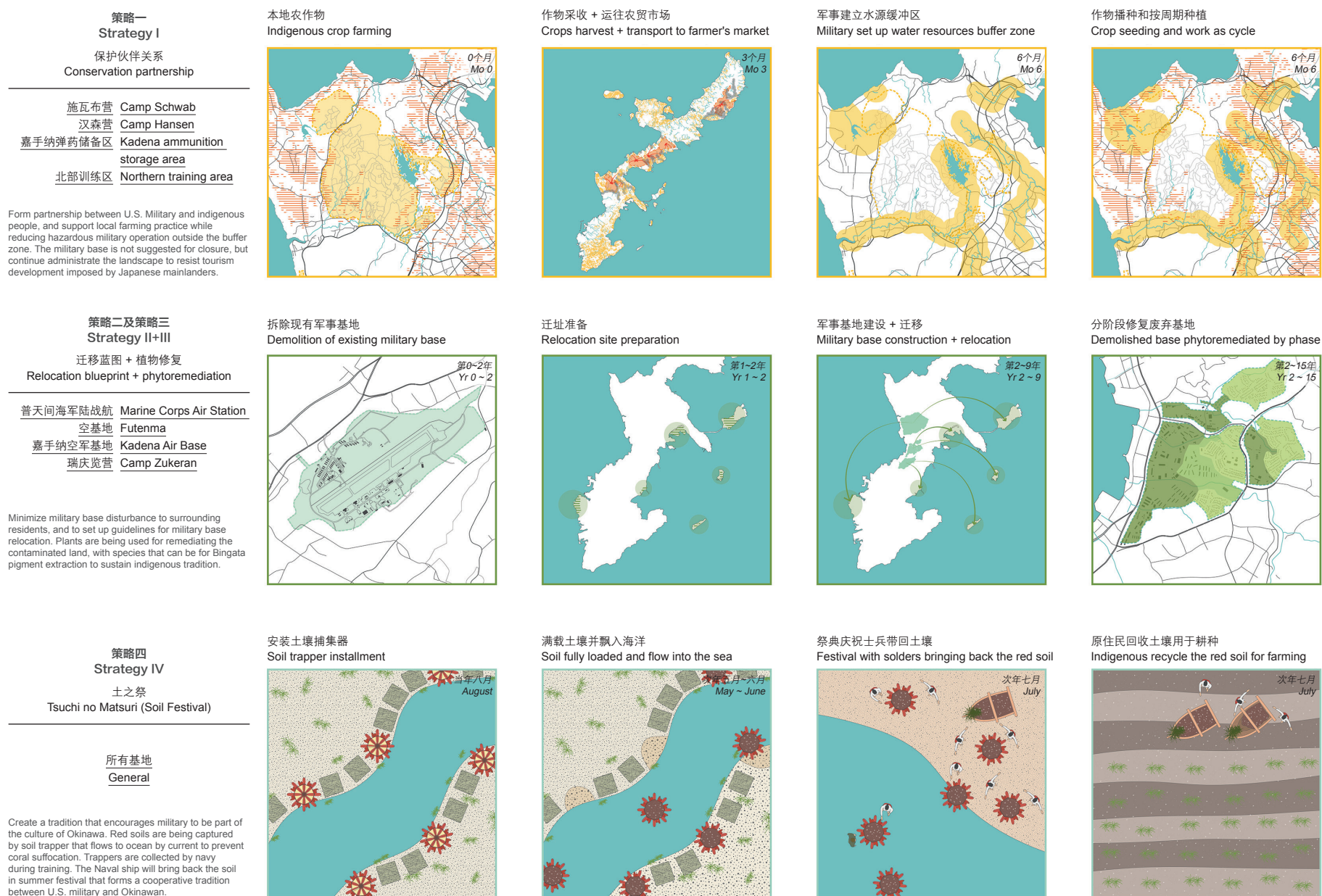


8. 阶段性策略示意图
8. Strategic phasing diagram

socioeconomic restrictions were reduced, and they can now enjoy more institutional benefits from state agencies.^[7] If Okinawans can be recognized as an indigenous people, then they will likely enjoy more self-autonomous and bargaining power in the stage of international negotiation.

In the eyes of the Mainland Japanese, Okinawans are inferior foreigners.^[8] Okinawans were forced to make great sacrifices during World War II, and the United States occupied Okinawa for 27 years after the Battle of Okinawa in 1945. Even after signing the Okinawa Reversion

Agreement in 1971, Japanese government is reluctant to move the U.S. military bases off of Okinawa. As the military bases took up a large portion of Okinawa Island, the economic development on the Island has been held back. In the 1990s, part of Nakagusuku Bay (Uruma city now) in the central part of Okinawa Island was selected as the site of Japan's first special economic zone to encourage a more balanced development of prefectural land.^[9] However, such an effort to transform Okinawa into a logistics hub for trade with the rest of Asia has failed.^[10] More recently, the Mainland Japanese are





9. 保护伙伴关系策略可达成美军士兵与冲绳人的双赢。
 10. 迁移蓝图策略指导新的美军基地选址于远离珊瑚以及城市密集区的工业区域。
9. Conservation partnership strategy results in a win-win between soldiers and Okinawans.
 10. The relocation blueprint strategy guide the new military bases to the industrial area with absence of coral and dense urban fabric.

attempting to shape the Island as a tourist spot for vacations to help with the economy while exploiting Okinawa's resources through tourism development.^[11]

2.2 Current Relocation Plan and a Fictional Perspective

In 1996, SACO launched the SACO process to reduce the military burden on Okinawans, consequently strengthening the Japan–U.S. alliance.^[12] The committee developed ways of realignment, consolidation, U.S. facility reduction, and the adjustment of the operational procedures of the U.S. forces on Okinawa Island as consistent to the obligation under the Treaty of Mutual Cooperation and Security between United State and Japan and other related agreements. However, Okinawans were unsatisfied with the proposed plan. In 2013, a revised realignment and consolidation plan (i.e. Consolidation Plan for Facilities and Areas in Okinawa) was drafted by the U.S. and Japanese governments to enhance the Japanese and U.S. public support on the allied security, with the aim of contributing to the sustainable presence of U.S. forces and facilities in Japan. Both plans were opposed by the locals but the Japanese government insisted on their implementation.^[13]

Through a fictional perspective, this study imagines that

by 2022, the 50th anniversary of Okinawa's reversion to Japan, the landscape of this remote Island will be seriously contaminated by the U.S. military bases and local conflict will have intensified continuously. This study responds to the aforementioned challenges by proposing a landscape-based alternative realignment strategy. By analyzing the marine ecology, land wildlife, and human livelihood involved, the seven most critical military bases on Okinawa Island are identified and are included in this strategy (Fig. 7). Given the differences in their social-ecological contexts, they are categorized into three groups and their respective realignment plan will be carried out in phases.

The first group entails military bases that occupy large forest lands and which are not readily relocated. A conservation partnership program is allocated for this group. The second group involves air bases with noise pollution and camps that pose serious water and soil pollution. These bases are suggested for relocation following environmental guidelines. The third group comprises decommissioned bases created after the relocation. Phytoremediation are applied to these post-military properties. Military bases that are recommended for relocation include the Marine Corps Air Station in Futenma,

11. 在传承文化的植物修复策略中，土地培育了可以修复土壤的本土植物，也为文化传承提供了原材料。
12. 在土之祭策略中，美军带回土壤的仪式很快成为见证自然、冲绳人和军队共存的传统祭祀。

11. In the strategy of phytoremediation for culture, the soil breeds the native plant species that can remove the toxins in soil as well as provide source of material in creating their culture.
12. In the strategy of Tsuchi no Matsuri (Soil Festival), the welcome their effort in bring back the soil soon turn into a traditional 'Matsuri' that embrace the coexistence of nature, Okinawan and military culture.



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the Kadena Air Base, and Camp Zukeran (Camp Foster). The other four which cover an extensive area of a forest training ground, including Camp Schwab, Camp Hansen, the Kadena Ammunition Storage Area, and the Northern Training Area, are recommended to undergo a conservation partnership program instead of relocation to avoid double contamination (Fig. 8).

3 Strategic Realignment: Landscape Strategies

3.1 Strategy I: Conservation Partnership

Conservation partnership will be applied for the forest type military base that occupies a large area of land and which is almost impossible to be relocated. This strategy envisions that Okinawans will soon be recognized as an indigenous people under the UN recommendation and their indigenous rights will be respected and valued. This scheme imagines the Japanese and U.S. governments signing an agreement to support the partnership between indigenous people and the U.S. military. The indigenous Okinawans will grow fresh local farm products and sell them to the military through a farmer's market. Military activities such as Osprey training and live fire training will be limited outside the buffer zone so as to protect

the river habitat from contamination. This approach protects the indigenous landscape and the indigenous Okinawan can continue to use their homeland resources for daily use and farming. The military will still manage the base area, making an arrangement which will help resist the mainland Japanese developing tourism and overexploiting resources, while the indigenous Okinawans are allowed to occupy and protect their ancestral land (Fig. 9).

3.2 Strategy II: Relocation Blueprint

A relocation blueprint is designed to identify potential sites that minimize the negative impact of relocated military bases. In terms of site selection, relocated military bases should keep distance from densely populated areas to avoid disturbance and pollution to island residents, and its impact area should avoid critical habitats for threatened species and coral reefs that harbor a large variety of marine life. Given that water source of Okinawa Island is concentrated in the northern part and distributed to central and southern parts of the Island through water pipelines, the relocated bases should be placed at the southern part of the Island to minimize the risk of contamination intrusion through water systems. The

ocean current can also quickly wash away the effluent from the military base to avoid the concentration of contaminants. One water treatment plant must be built on each base, and the recycled water can be used for productive and non-productive consumption (Fig. 10).

3.3 Strategy III: Phytoremediation for Culture

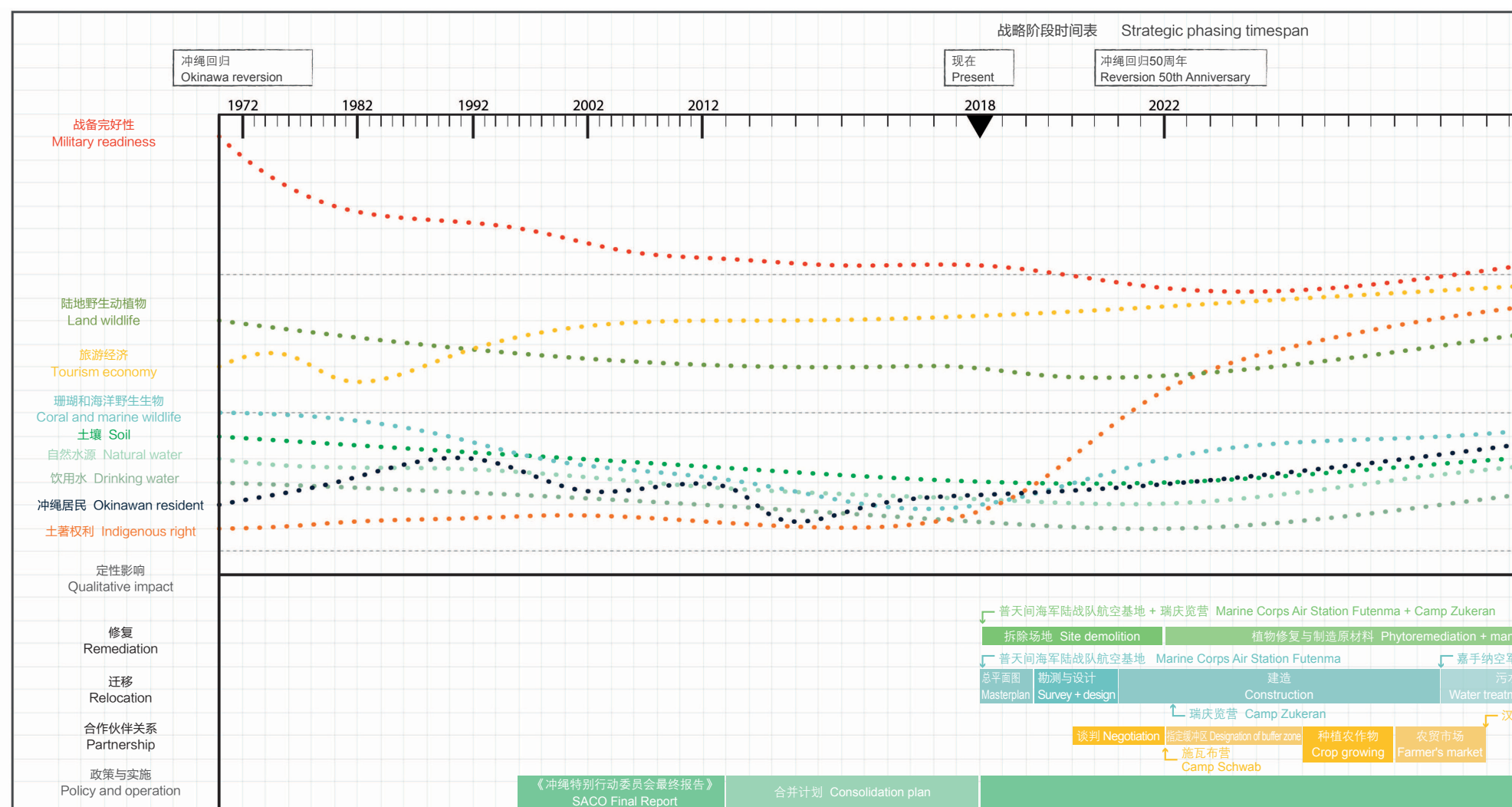
Continuous phytoremediation will be conducted before, during and after successful relocation on decommissioned bases. Native species that are accumulators should be grown to remove toxins in soil and water. Plants are to be harvested seasonally and their pigments are extracted for manufacturing Bingata, a traditional dyeing technique in Okinawa, so as to

provide a raw material for their traditional craftsmanship. The dyes are made from plants including Ryukyu ai (*Strobilanthes cusia*), fukugi (*Garcinia subelliptica*), sappanwood (*Biancheae sappan*), yang mei (*Myrica rubra*), Chinese hibiscus (*Hibiscus rosa-sinensis*), tiger's claw (*Erythrina variegata*), and sugar cane (*Saccharum officinarum*). Another round will be planted on the harvested area to restart the cycle. The military bases will soon become a sustainable cultural manufacture line in Okinawa Island (Fig. 11).

3.4 Strategy IV: Tsuchi no Matsuri (Soil Festival)

“Tsuchi no Matsuri” aims at nurturing a novel form of Okinawan culture to prevent the re-emergence of tension

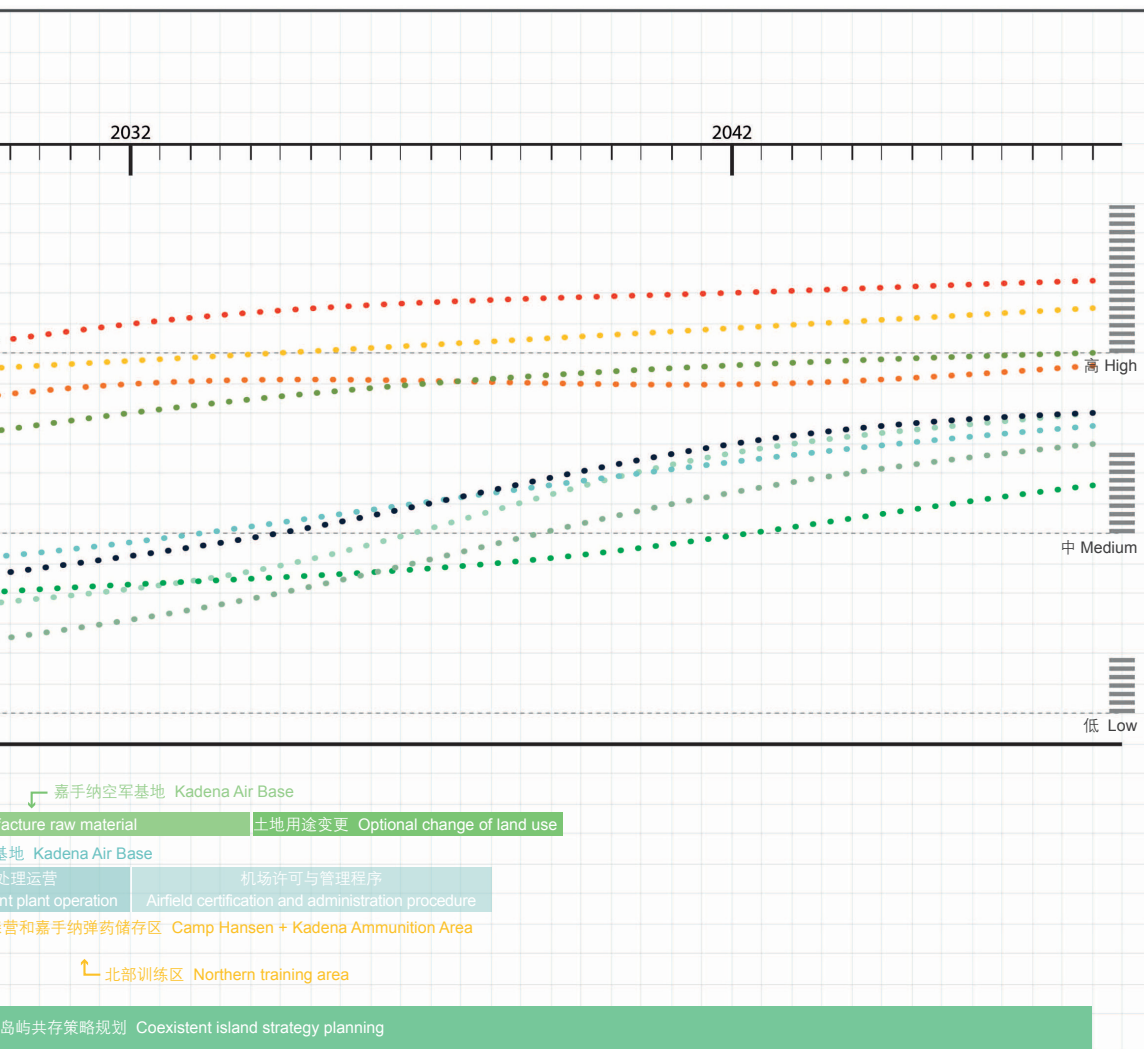
13. 在政策实施的基础上，从虚构视角提出的策略随时间推移对各方的影响的预测。
13. With the policies and operations implemented, strategies are proposed and developed on a fictional perspective, whose impact on the “stakeholder” qualities is forecasted temporally based on the previous influence.



between the locals and the U.S. military. This strategy envisions an ideology for which the most sustainable planning in the Japanese context relies on creating tradition, regardless of whether the bases are relocated or not. In areas with excessive soil erosion, small soil traps are placed in the river to collect eroded red soil that can suffocate and bury coral reefs. The traps flow along the ocean current to an offshore central collector. Naval ships will collect the soil periodically during their training and bring the red soil back to the Island for growing crops. The U.S. soldiers then become part of the Island's guardians, and the ritual will soon become a traditional "matsuri" (Japanese term for "festival") on Okinawa Island that embraces the coexistence of nature, Okinawans, and a military reality (Fig. 12).

4 Conclusion: Fictional Landscape for an Alternative Future

The influence caused by a foreign military power over an indigenous landscape is never only a physical issue. What it truly affects is intrinsically the underlying environmental, social, and cultural aspects. Under the dilemma between the essential national security and the adverse impact it caused to the local environment, landscape acts as a powerful agent to mediate the two. By using a fictional perspective to imagine the future of the military landscape on Okinawa Island, this study explores alternative futures of the coexistence of a foreign military, the natural environment, and indigenous Okinawan. The specific representation in the project serves not only as a conclusive propaganda that encourages landscape architects to rethink the future of Okinawa's landscape, but as understandable and humanistic statement that allows stakeholders involved in the militarization and demilitarization processes to reflect upon the value of this unique island landscape, the origin that makes local culture emerge and flourish (Fig. 13). **LAF**



REFERENCES

- [1] Pajon, C. (2010, June). Understanding the Issue of U.S. Military Bases in Okinawa. Centre for Asian Studies. *Asia.Visions* 29. Retrieved from https://www.ifri.org/sites/default/files/atoms/files/understanding_the_issue_of_u.s._military_bases_in_okinawa.pdf
- [2] Voda, K. R. (2012). Relocation of the U.S. Military Bases Problem in Japan-U.S. Relations: The Okinawa Vector. *International Relations*, (1), 31-38.
- [3] Mitchell, J. (2016). Contamination at Largest US Air Force Base in Asia: Kadena, Okinawa. *The Asia-Pacific Journal: Japan Focus*, 14(9), 1-15.
- [4] Department of Defense. (2015). Base Structure Report—Fiscal Year 2015 Baseline. Office of the Under Secretary of Defense for Acquisition and Sustainment. Retrieved from <https://www.acq.osd.mil/eie/downloads/bsi/base%20structure%20report%20fy15.pdf>
- [5] Indigenous peoples in Japan. (2020, May 11). IWGIA. Retrieved from <https://www.iwgia.org/en/japan>
- [6] Inoue, M. S. (2007). Okinawa and the U.S. Military: Identity Making in the Age of Globalization. <https://doi.org/10.7312/inou13890>
- [7] Maruyama, H. (2013). Japan's post-war Ainu policy. Why the Japanese Government has not recognised Ainu indigenous rights? *Polar Record*, 49(2), 204-207. doi:10.1017/S003224741200040X
- [8] Tuke, V. (2012, November 2). Understanding the complexity of Okinawa. *East Asia Forum*. Retrieved from <https://www.eastasiaforum.org/2012/11/02/understanding-the-complexity-of-okinawa/>
- [9] McCormack, G. (1999). From the sea that divides to the sea that links: Contradictions of ecological and economic development in Okinawa. *Capitalism Nature Socialism*, 10(1), 3-39. doi:10.1080/10455759909358846
- [10] Hongo, J. (2012, May 15). 40 years after return, Okinawa still struggling to grow up. *The Japan Times*. Retrieved from <https://www.japantimes.co.jp/news/2012/05/15/national/40-years-after-return-okinawa-still-struggling-to-grow-up/>
- [11] McCormack, G., & Norimatsu, S. O. (2012). *Resistant islands: Okinawa confronts Japan and the United States (Asia / Pacific / Perspectives)*. Lanham, Maryland: Rowman & Littlefield Publishers.
- [12] The Japan-U.S. Special Action Committee [SACO] Interim Report. (1996, April 15). Minister for Foreign Affairs of Japan. Retrieved from <https://www.mofa.go.jp/region/n-america/us/security/seco.html>
- [13] Kageyama, Y. (2019, February 25). Okinawa referendum rejects relocation for US military base. *AP News*. Retrieved from <https://apnews.com/article/a7c38b40484f4e2e8b3c3534c74f5a9e>