

**Okinawa Prefecture Guidelines on Natural Environment
Restoration: Restoring a Lush Natural Environment and Handing
Down a Beautiful Island to Future Generations
(Excerpt)**

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Part 1 Aiming to Restore the Natural Environment Unique to Okinawa

Chapter 1 Aim of the Guidelines on Natural Environment Restoration

(Omitted)

1. Background and Objectives behind the Formulation of the Guidelines

(Omitted)

As part of this, Japan entered the Act on the Promotion of Nature Restoration into force in 2005 with the goal of restoring the ecosystems and other natural environments that had been tarnished in the past. Based on this law, projects to restore the natural environment and other such initiatives have been carried out nationwide.

In Okinawa Prefecture, initiatives for the Sekisei Lagoon, which is one of the largest coral reef regions in Japan, have been advanced on the basis of this law. However, there were no guidelines that systematically arranged information like the characteristics of natural environments that had been lost, challenges concerned with the restoration of the natural environment, and points to keep in mind when promoting projects to restore the natural environment. Therefore, the Guidelines on Natural Environment Restoration were recently enacted, to compile together these necessary matters.

2. Positioning of the Guidelines

The Act on Special Measures for the Promotion and Development of Okinawa (Act No. 14, 2002) stipulates that “The national and local governments shall take measures that aim to maintain and rehabilitate ecosystems, as well as all other necessary measures, in order to contribute to the conservation and restoration of the natural environment in Okinawa.” What is more, it advocates for the “Conservation, restoration, and appropriate use of the natural environment,” which is a fundamental measure found in the Basic Plan for 21st Century Vision of Okinawa (2012), which was enacted pursuant to this law.

Okinawa Prefecture enacted various guidelines, plans, and so forth as shown in Fig. 1-1 to promote these measures. Up until that point, nothing had been enacted that placed emphasis on measures concerning the restoration of the natural environment.

Therefore, these guidelines were enacted as a specific initiative in an effort to promote and strengthen projects to restore the natural environment. It will be necessary to continue working to restore the natural environment unique to Okinawa while coordinating with related plans, as well as plans and measures for each sector.

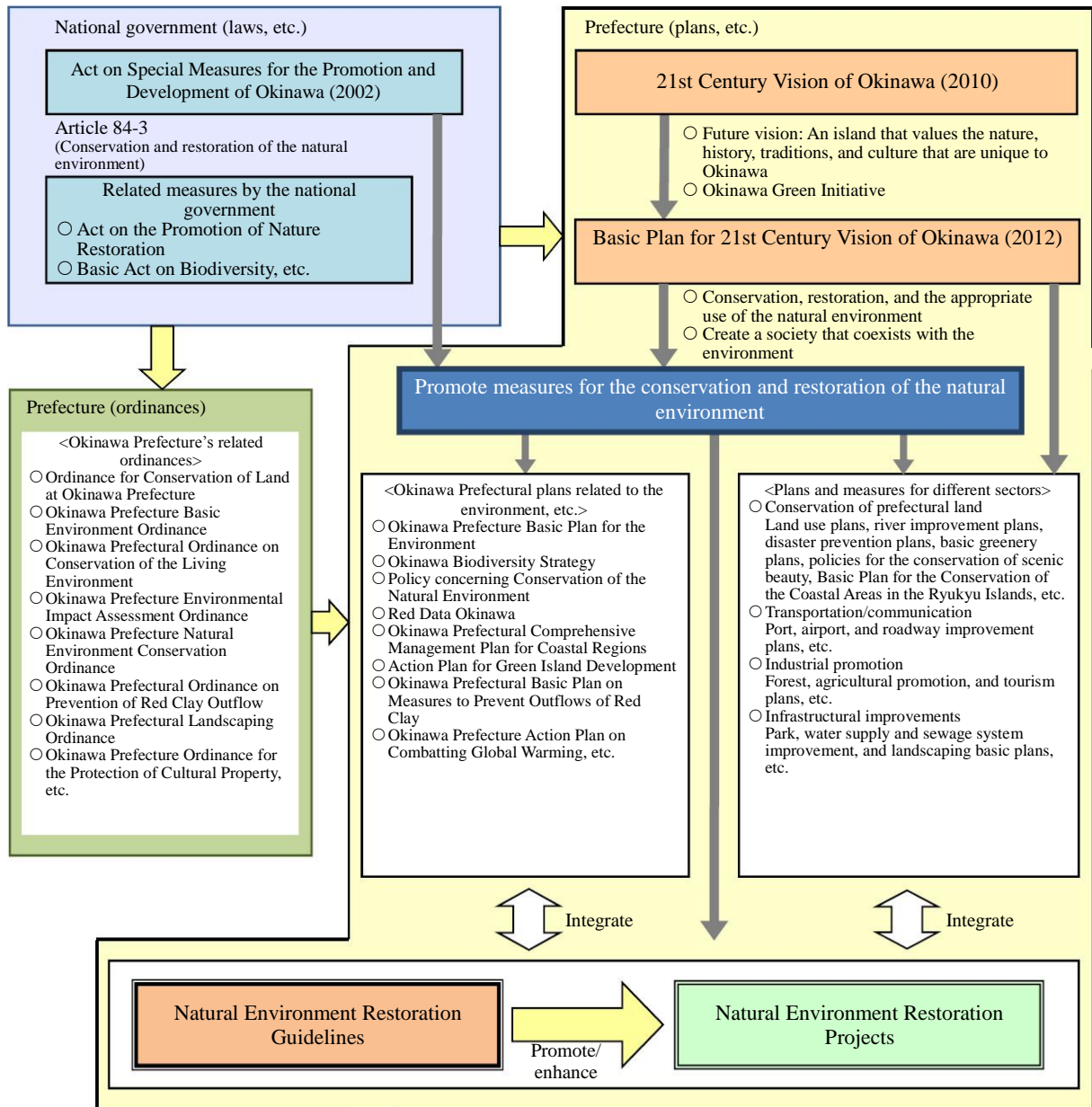


Fig. 1-1 Positioning of the Guidelines on Natural Environment Restoration

3. Fundamental Principle of the Guidelines

Human activity is one element found within ecosystems that comes about as a result of the influence exerted by nature and our dependence on nature. There is also the fact that since time immemorial humans have lived within nature, maintained connections between people and nature, and preserved this harmony, thereby maintaining the natural environment.

The natural environment has brought about numerous benefits for mankind and has served as the source of a culture of abundance. For this reason, we have made it the fundamental principle of these

guidelines to restore the abundant natural environment that has been tarnished as a result of the industrial and human activities carried out in the past so as to pass down a beautiful island to future generations. For this, we will restore the lost soundness and biodiversity of ecosystems, further deepen connections between people and nature, and maintain and improve these conditions.

What is more, in order to restore the natural environment based on these fundamental principles, “Restoring sound ecosystems,” “Ensuring biodiversity,” “Contributing to the creation of venues for interacting with nature,” and “Contributing to disaster prevention and mitigation” were defined as basic policies, and will continue to be promoted.

(Omitted)

Part 2 Basic Thinking on Projects to Restore the Natural Environment

Chapter 1 Implementation Details for Projects to Restore the Natural Environment

(Omitted)

2. Implementation Procedures for Projects to Restore the Natural Environment

The basic procedure for projects to restore the natural environment is shown in Fig. 2-2 and Table 2-1. This starts with an idea and drafting, then considering a concept and plan, performing construction work based on the concept and plan, and then striving to make use of the restored natural environment while maintaining it as well. There are projects that emphasize natural restoration and projects coordinated with infrastructural improvements, which differ in terms of points like whether or not an overall concept is created for them and the manner in which they are involved in the local region. An outline of their implementation procedures is shown in (1)–(4) below.

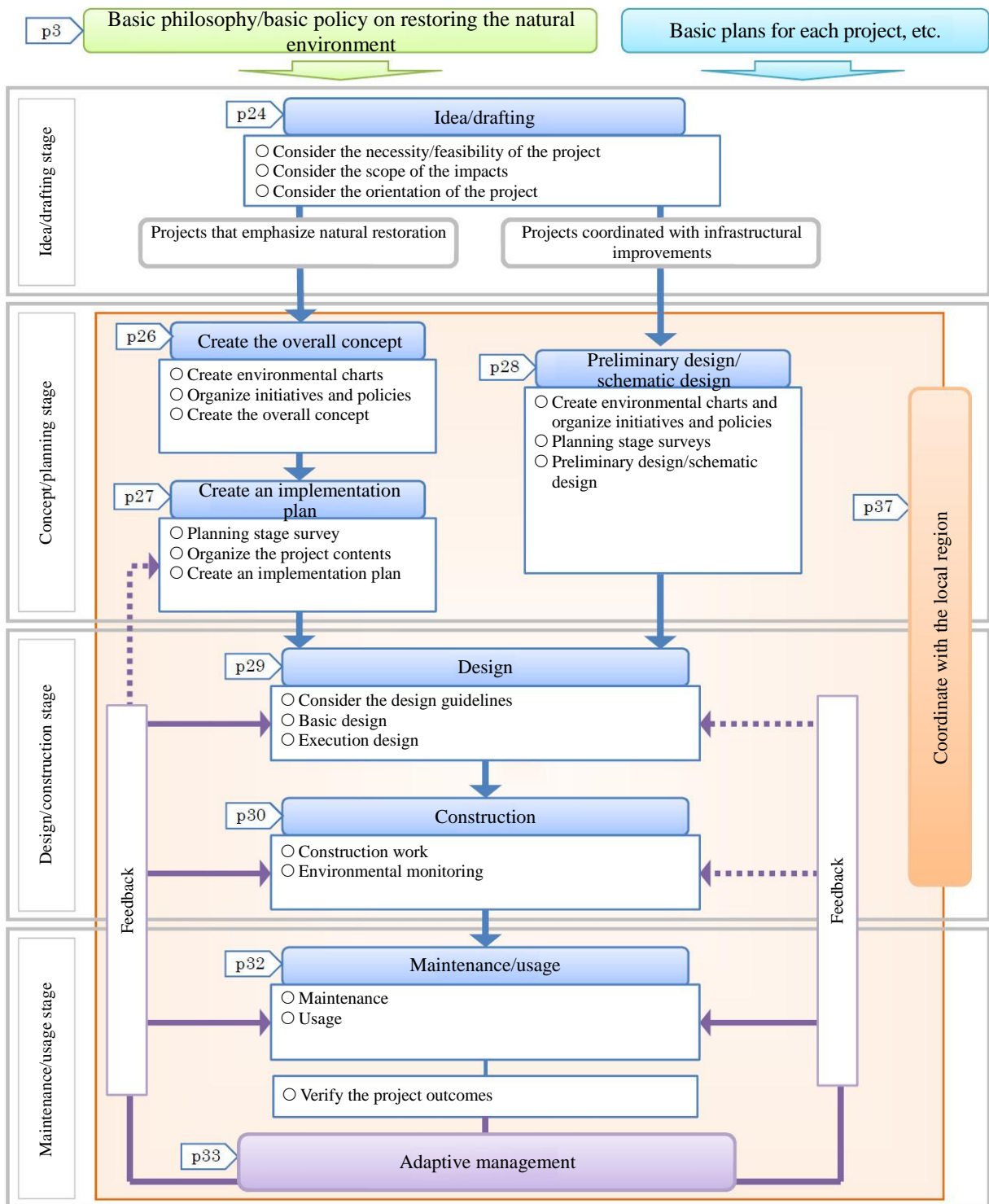


Fig. 2-2 Overall flow for projects to restore the natural environment

Table 2-1. Implementation procedures for projects to restore the natural environment

	Projects that emphasize natural restoration	Projects coordinated with infrastructural improvements
Idea/drafting stage	<p>○ Idea/drafting</p> <p>In aiming to instantiate initiatives for restoring the natural environment, engage in the considerations necessary in order to clarify the project’s category and the need for coordination with other projects. This is to be done before considering the concept and plans for restoring the natural environment.</p>	
Concept/planning stage	<p>○ Create the overall concept</p> <p>Prepare environmental charts that organize the conditions in the natural environment and social environment. Then, based on their contents, organize policy guidelines for natural environment restoration, and create the “overall concept” by aiming to build consensus with the local region.</p>	<p>○ Preliminary design/schematic design</p> <p>Organize the conditions in the natural environment and social environmental, as well as content concerning the restoration of the natural environment while aiming for integration with the basic plans (higher-level plans) of each project. Then, incorporate this into the preliminary design and the schematic design.</p>
	<p>○ Create an implementation plan</p> <p>Perform planning stage surveys with a view towards formulating an implementation plan. Based on the results of these surveys and the overall concept that has been created, create an “implementation plan” that instantiates the project contents.</p>	
Design/construction stage	<p>○ Design</p> <p>Based on the results of the examinations from the concept/planning stage, create designs (basic design/execution design) that incorporate the items necessary to get started on the project (start construction).</p>	
	<p>○ Construction</p> <p>Carry out the construction work onsite based on the designs. In addition, perform the necessary surveys to confirm the impact on the environment (environmental monitoring) regarding the construction work.</p>	

Maintenance/ usage stage	<p>○ Maintenance/usage</p> <p>After the construction work is finished, strive for the maintenance and usage of the natural environment based on the content from the concept/planning stage, and verify the project outcomes.</p>
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* In promoting projects, it is important to continue to carry out initiatives based on the “Regional ecosystem networks” discussed in this section, as well as those based on the thinking behind the “Adaptive management” and “Coordination with the local region” discussed in Chapter 2.

(Omitted)

Chapter 2 Points to Keep in Mind regarding the Implementation of Projects to Restore the Natural Environment

(Omitted)

1. Adaptive Management

In order to implement projects to restore the natural environment, it will be necessary to continue making progress with a philosophy of “adaptive management” serving as the foundation. Adaptive management involves performing monitoring and evaluations on the state of the natural environment and reflecting this into things like the design, construction, and maintenance/usage in order to achieve the project’s targets.

(1) The Adaptive Management Approach

Adaptive management refers to an approach of setting appropriate management targets, performing verifications and assessments by monitoring whether these targets have been achieved or not through the construction work and maintenance/usage, and flexibly adapting through coordination with the local region in order to achieve the project’s targets. This takes into consideration the fact that the ecosystems and other natural environments that are targeted by projects to restore the natural environment are constantly changing, and that unforeseen circumstances arise (Fig. 2-5).

The items shown below are considered and arranged when implementing adaptive management.

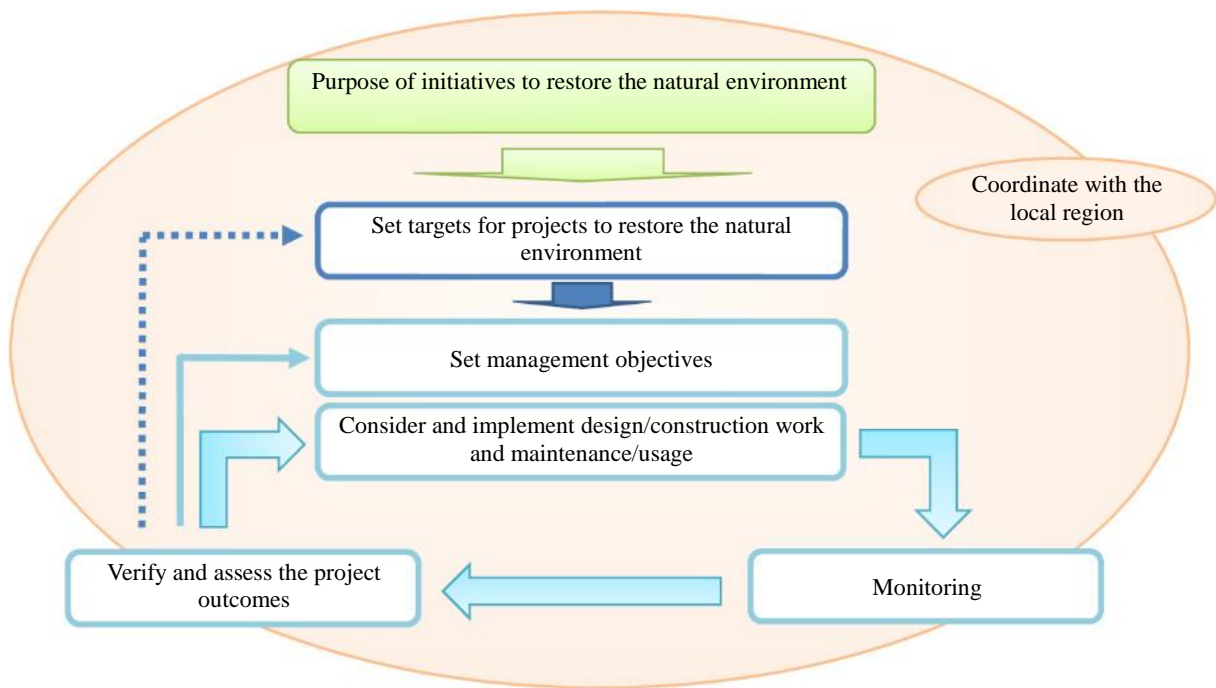


Fig. 2-5 Image showing the process of adaptive management

(Omitted)

(2) Creating Cooperative Structures

It will be important to create structures for ensuring sustainability in order to promote adaptive management. Therefore, consideration will be given to the items indicated below based on “2. Coordination with the Local Region” in order to create cooperative structures for this.

1) Creating Structures to Perform Monitoring

(1) Cooperative Structures with the Local Region

Monitoring and maintenance are exacting tasks that must be performed by manual effort, and which require a long-term perspective attuned to the cycle of natural transitions. Therefore, it is necessary to seek the cooperation of local residents, various organizations, and others in creating sustained arrangements that are rooted in the local region.

(2) Consider Establishing the Natural Environment Restoration Monitoring Review

Committee (provisional title)

Scientific verifications will be performed on the monitoring results, and the contents of projects will be revised on the basis of these results. A Natural Environment Restoration Monitoring

Review Committee (provisional title) that is comprised of experts, academics, and other specialists should be established for this.

2) Division of Roles

Ideally, an arrangement should be created whereby the local residents, various organizations, the government, and others take part from the initial maintenance/usage stage by discussing and sharing the targets and monitoring methods.

Table 2-4 and Fig. 2-7 show an image of the division of roles for monitoring.

Table 2-4. Image of the division of roles for monitoring

Participant	Role
Local residents, various organizations, etc.	Perform surveys to get a grasp of the day-to-day environmental changes in the targeted regions by using simplified monitoring. If there are people with expert knowledge present in the region, consider arranging it so that project implementers carry out the surveys.
Researchers, etc.	Promote research of a high degree of difficulty, and assess the results of projects to restore the natural environment. Offer proposals concerning points of improvement for and feedback on design/construction work and maintenance/use.
Project implementers	Periodically make efforts to get a grasp of the natural environment over a broad area.

(Omitted)

2. Coordination with the Local Region

In each of the stages of “Concept/plan,” “Design/construction,” and “Maintenance/usage” of projects to restore the natural environment, the projects will be promoted by working to ensure the participation of and coordination between a diverse array of entities in the local region. This shall be done via coordination with the local region suited to each stage. The basic thinking behind this will be indicated in this section.

(Omitted)

(2) Basic Thinking behind Coordination with the Local Region

(Omitted)

2) Image of Local Participation in Projects to Restore the Natural Environment

(1) Participating Entities

The people listed below are thought of as participating entities (individuals or organizations/corporations) for projects to restore the natural environment.

- Project implementers (people who would like to implement the project)
- Participants (people who would like to participate in the project)
 - Local residents, NPOs and other similar organizations, as well as various other organizations (unions/associations)
 - People involved in education, people with expert knowledge (researchers and other experts)
 - Land managers
 - People who are active locally (people who come to the region from outside and are active there on a regular basis), etc.
- Related administrative agencies (those who contribute to the project from an administrative standpoint (position with jurisdiction over related laws, ordinances, and plans; position as a contact point for coordinating with the local region))

(2) Goal-based Coordination with the Local Region

For projects to restore the natural environment, it is important to continue to maintain and use the restored natural environment through sustainable connections with the local region.

Therefore, as opposed to projects coordinated with infrastructural improvements, projects that emphasize natural restoration, for which the goal is the restoration of the natural environment itself, need to continue to deepen coordination with the local region to a greater extent.

Conversely, with projects coordinated with infrastructural improvements, for which the main goals are improving lives, preventing and mitigating disasters, and safety, it is envisioned that they will strive for comparatively looser coordination, given the differences in their main goals.

(3) Image of the Committee

It will be necessary to consider what sort of committee should be created based on modalities for how coordination with the local region should function.

For example, in the case of projects that emphasize natural restoration, it is envisioned that efforts will be made for adequate coordination with the local region by establishing a committee as early

a stage as possible and making efforts to share information and build consensus. This should be established as a committee that will serve as a venue for continued development together with projects to restore the natural environment.

It is envisioned that projects coordinated with infrastructural improvements will feature comparatively looser coordination. As such, it is envisioned that a committee that will serve as a venue for adequately reflecting opinions from the local region and calling for its cooperation with maintenance and monitoring will be established so that the restored natural environment continues to be properly used.

An image of this committee is shown on the following page.

(Omitted hereafter)