

# UJUNG KULON NATIONAL PARK, PRIORITY ACTIONS TO CONSERVE JAVAN RHINO IN UJUNG KULON NATIONAL PARK

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## ABSTRACT

The Javan Rhino (*Rhinoceros sondaicus*) population in Ujung Kulon National Park has not changed considerably and has leveled off at about 50 individuals over the last twenty years. The population is subject to environment change, habitat destruction, inter-species competition, loss of genetic diversity, epidemic and human disturbance when they live concentrated in a limited area, Ujung Kulon Peninsula.

Management experience suggests that ongoing protection and guarding efforts are not enough to conserve the rhino successfully. Increased attention and efforts are required concerning: their population and natural habitat management; the availability of updated data and information on the entire ecosystem; and comprehensive and systematic research activities on the biology and ecology of Javan rhino. Further management needs tested, systematic, and integrated actions to develop a viable rhino population.

## INTRODUCTION

Ujung Kulon National Park is a low land tropical rain forest ecosystem still undergoing succession. The Javan Rhino (*Rhinoceros sondaicus*) is the most important part but is interrelated to the other components of this ecosystem. Hence, all changes of ecosystem due to natural or human activities will affect the existence of the Javan rhino.

Conservation of Javan rhino is considered inadequate at this time. A major problem is insufficient data and information. Moreover, conservation efforts have concentrated only on activities to protect the rhino population and habitat. Experience suggests that systematic and comprehensive research support and tested conservation management actions are badly needed as well for rhino conservation.

Therefore, further Javan rhino conservation must include not only actions for population and habitat protection, but also for population and habitat management indicated by research activities sustain and increase the Javan rhino population at a rate to prevent extinction.

## CONSERVATION PROBLEMS

In the execution of Javan rhino conservation, the viability of the rhinos is threatened by some problems as follow :

- a. Distribution of Javan rhinos. They are concentrated on Ujung Kulon peninsula. The peninsula covers only areas of 30,000 hectares. This condition renders the rhino to be vulnerable extinction from a number of various factors: environment change; habitat destruction; intra-species competition; genetic degradation; epidemic diseases; and human disturbance, such as poaching, encroaching, illegal cutting, etc.
- b. Poaching of Javan rhinos. Poaching has decreased over the last decade. However, protection against poaching threat must remain in recognition that illegal trade of rhino horn and other parts still exists. The limited capability of our park guards/rangers to patrol and to prevent poaching of rhino and illegal trade in rhino parts is also a contributing problem for Javan rhino conservation effort.
- c. Succession process and ecological dynamic of the forest. The succession process and ecological dynamic still continues and is complicated by the fast spread of the Langkap species (*Arenga*

*obtusifolia*) over the peninsula. This fast Langkap distribution can retard the growth of rhino food plants. In addition, decreased quality of habitat in Ujung Kulon peninsula also threatening rhinos preservation seriously.

- d. Grazing areas. Existing grazing areas have yet to be managed well and are used only by small number of Banteng. This condition causes the Banteng to be distributed over the forest constituting rhino habitat and causes competition for space and food between the rhinos and the Banteng threatening the rhinos survival.

#### **PRIORITY MANAGEMENT ACTIONS TO CONSERVE JAVAN RHINO**

In consideration of the problems facing Javan rhino conservation, the long-term objectives for the Javan rhino conservation program are:

1. to maintain the Javan rhino population at a size and rate of reproduction which can ensure the long-term survival of the species through conservation management practices.
2. to increase the natural carrying capacity of Javan rhino habitat in Ujung Kulon National Park.

To achieve the objectives, population and habitat monitoring are absolutely required to ensure the availability of updated data and information as the basis for decision making process of the park management. Noting that Ujung Kulon is an island habitat which is still under ecological succession process since the Krakatau eruption in 1883 and which has not yet reached a climax community, ecological dynamics could be dangerous to the survival of the rhino.

As a national park and one of the natural world heritage site, the management of Ujung Kulon does not exclusively deal with Javan rhino but also inclusively with a whole biodiversity management, conservation education and ecotourism development. Within this framework, management actions with many different specific and hierarchized objectives should be formulated and carefully designed to prevent the negative impacts to the Javan rhino survival.

- a. Draft guidelines for Javan rhino habitat management based on Langkap cutting have been formulated and discussed through a workshop held on March 18th, 1997 in Bogor. As far as known, Langkap dominance will decrease the availability of Javan rhino food plant. However, before a large scale implementation of Langkap cutting, there is need of research support concerning : (a) Langkap ecology, both synecology and autecology (under study), including some comparative studies outside Ujung Kulon National Park; (b) Common Palm Civet population and behavior as seed disperser of Langkap in Ujung Kulon National Park; and (c) Increase in data accuracy on Javan rhino population thought improved methodology.
- b. The most recent and on going research carried out by IPB team in collaboration with the park management including : (a) Pilot project on Javan rhino habitat management (FY 1991/1992 - 1996/1997); (b) Langkap invasion and its role in Javan Rhino habitat degradation (FY 1996/1997 - 1998/1999); (c) Competition between Javan rhino and Banteng (FY 1997/1998 - 1999/2000); (d) Javan rhino consensus organized by the park management (FY 1994/1995 - 1996/1997); and (e) Some socio-economic and cultural studies by LATIN and WWF - Indonesia Programme (FY 1991/1992 - 1996/1997), can be used as primary information to formulate some further management actions.

In the final analysis, priority actions to conserve Javan rhino can be formulated as follow :

- a. To update the Population and Habitat Viability Analysis (PHVA) for the Javan rhino to determine proper specific actions and revise Indonesian Rhino Conservation Strategy.
- b. To install automatic climate station in three sites, namely Cidaon/Peucang, Cibunar and Karangranjang. Climate instability could be a strong factor affecting habitat dynamic of Javan rhino.
- c. To formulated a computerized management information system or data base, including a Geographic Information System (GIS) based on systematic monitoring. Considering the present

limitation of human resources in Ujung Kulon National Park, the participation of co-operating organizations is needed for an adequate monitoring system.

- d. To properly manage grazing areas to prevent risk of intensive competition of Banteng with Javan rhino. It is assumed that good quality of grazing areas will attract Banteng and concentrate their population in the grazing areas.
- e. To strengthen the institutional capacity to improve the protection system. A study on ranger commitment and behavior, supported by analysis of poaching history and installation of a semi-automatic or automatic alarm system may be required to improve safeguarding system. It should be noted that increasing incentive is not automatically increase effectiveness of safeguarding against poaching and other illegal activities in the park.
- f. To improve management facilities and equipment.
- g. To develop conservation education materials and nature interpretation tracks.
- h. To evaluate all species present in Ujung Kulon National Park.

The current research projects have performed some important need for future management of Ujung Kulon National Park. However, other research projects of top priority have been identified as follow :

- a. Comparative study of census methods to gain more accurate data on Javan rhino population. Two options were proposed : (1) Increase intensity of camera trapping methods; and (2) Reveal the optimum transect distance in track count methods.
- b. Comparative study on Langkap ecology outside Ujung Kulon National Park. Recommended study sites are : Nias Island, Cikepuh Nature Reserve, Siberut Island and along Rokan River-Riau (one proposal has been submitted to Rhino and Tiger Conservation Fund).
- c. Study on the population and behavior of Common Palm Civet (*Paradoxurus hermaphroditus*) in Ujung Kulon National Park (one proposal has been submitted to Rhino and Tiger Conservation Fund).
- d. Javan rhino genetic mapping as a basis for more accurate population and habitat viability assessments (PHVAs) as well as for establishment of a second population (will be carried out by WWF-Indonesia Programme).
- e. Policy study on Ujung Kulon National Park, especially addressing to clarify the status of Ujung Kulon as a natural world heritage site (ranger commitment and behavior).
- f. Evaluation of Javan rhino ecology and behavior especially resources utilization and movement pattern and fecal analysis (including identification of reproduction status). Observation rhino behavior is proposed to be carried out through canopy track or Rhino sanctuary in small area (two proposal have been submitted to Rhino and Tiger Conservation Fund).

## CONCLUSION AND SUGGESTION

1. Conservation of Javan rhino requires not only protection and safeguarding efforts for their population and habitat but also needs pro-active efforts to manage the population and habitat of Javan rhino in a comprehensive and integrated manner.
2. Javan rhino conservation needs support from: better data and information; systematic and comprehensive research; and the integrated, systematic and tested management actions.
3. Priority actions to conserve Javan rhino include updating of Population and Habitat Viability Analysis (PHVA) for Javan rhino with further actions, installing climate stations, computerizing data and information, managing grazing areas property (ranger commitment and behavior), furnishing facilities and equipment, developing rhino conservation education materials and evaluating the present of conserved species.

4. Priority necessary researches to support Javan rhino conservation include study on census method, study on Ujung Kulon ecology, study on population and behavior of Common Palm Civet, mapping of Javan rhino genetic, study on management policy, and evaluation of behavior and ecology of Javan rhino.

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