

FINAL REPORT

WHITE-SHOULDERED IBIS PROJECT 2003

CONSERVING

WHITE-SHOULDERED IBIS *Pseudibis davisoni*

IN EAST KALIMANTAN



EDY SUTRISNO

IMANUDDIN



the bp conservation programme

WHITE-SHOULDERED IBIS PROJECT 2003
CONSERVING WHITE-SHOULDERED IBIS IN EAST KALIMANTAN

Field Team:

Edy Sutrisno
Reddy Rachmady
Deni Wahyudi

Support Team:

Imanuddin
Wim Ikbal Nursal
Anita nurul Huda
Dyah Dwi Nurani

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PREFACE

In year 2003, within the scheme of Follow-up Awards, BP Conservation Program supported the project on research and conservation activities of White-shouldered Ibis in East Kalimantan. The project was called The White-shouldered Ibis Project 2003.

Series of activities were conducted on this project such as Research on the White-shouldered ibis distribution, population, habitat and behavior; searching information of culture of local people related with this species and local people perceptions through interviews; dissemination information to schoolchildren through school visits and conducted training for university students.

These final report presenting results of activities were conducted during White-shouldered Ibis Project 2003 such as, White-shouldered Ibis distribution and its population in East Kalimantan, habitat, behavior, homerange and information of the White-shouldered Ibis ethno-zoology and local perceptions. The threats and recommendation for further conservation of White-shouldered Ibis are also presented.

It is expected that the results of activities in White-shouldered Ibis Project 2003 can be an important input to support any parties who are concern for conservation efforts, especially for the White-shouldered Ibis and its habitat.

ACKNOWLEDGMENT

The White-shouldered Ibis Project 2003 is very grateful to the BP Conservation Program for its full supports to this project and to the IdeaWild for its equipment donation.

Special thanks to DR. Dewi M. Prawiradilaga who was willing to supervised the activities and reviewing this Final Reports; to our counterparts, Rustam Fahmi; to Bumi NGO's in managing training activities; to Andri who helped in GIS analysis; and to DR. Yus Rusila Noor for his comment to this Final Report.

The team thanks to Natural resources conservation office (BKSDA) of East Kalimantan, District government of West Kutai, Provincial government of East Kalimantan, Regional controlling Environmental Impact Bureau (Bapedalda) of East Kalimantan and District Office of Department of Education of Long Iram for giving the permission to conduct the activities in their region.

Our deep gratitude also express to Bpk. Yus Mering's family in Datahbilang, Bpk. Fahmi's family in Berau, Om Halid's family in Long Iram, All friends on Cakram and Deny's family in Samarinda for the hospitalities and permitting their home to used by the team to spend the night, to John, Bit and Jupiter who willingness to assist the team during fields activities.

The team wishes to thank warmly all villagers in Datah Bilang ulu and Datah Bilang Iilir; all respondents; all schools were visited during activities.

Finally, the team would like to express its profound gratitude to all parties and individuals who cannot be mentioned in details for their supports in these activities.

CONTENTS

PREFACE -----	i
ACKNOWLEDGEMENT -----	ii
CONTENTS -----	iv

INTRODUCTION-----	1
A. BACKGROUND -----	1
B. AIMS AND OBJECTIVES-----	2

METHODOLOGY -----	3

A. ECO-BIOLOGY RESEARCH -----	3
A.1. Population and Distribution-----	3
A.2. Behavior-----	4
A.3. Habitat-----	5
A.4. Homerange-----	5
A.4. Ethno-zoology And Local Perception -----	6
B. PUBLIC AWARENESS-----	7
C. EQUIPMENT-----	8
RESULT -----	10
A. POPULATION AND DISTRIBUTION -----	10
B. BEHAVIOR -----	12
C. BREEDING BIOLOGY-----	14
D. DIETS-----	16
E. HABITAT -----	17
F. HOMERANGE -----	20

G. ETHNO-ZOOLOGY AND LOCAL PERCEPTION-----	21

H. BIRDWATCHING AND MONITORING TRAINING -----	28
I. SCHOOL VISIT-----	29
J. THREATS-----	34
CONCLUSION -----	36
RECOMMENDATION -----	37
REFERENCE -----	38

INTRODUCTION

A. BACKGROUND

Biodiversity Conservation Indonesia conducted the second phase of White-Shouldered Ibis Project in East Kalimantan with the support of BP Conservation Program and IdeaWild. The project started from the middle of August 2003 to the end of September 2004.

The White-shouldered Ibis *Pseudibis davisoni* is a waterbird species from Threskiornithidae family with declining population and has been classified as critically endangered species (BirdLife International 2001). This project was the continuation and the follow up of recommendation from the previous project (first phase) of Status And Distribution White-shouldered Ibis *Pseudibis davisoni* in East Kalimantan (Sutrisno & Imanuddin 2001).

The project has obtained some information on eco-biology of White-shouldered ibis, such as record on breeding activities and minimum habitat requirement. The project also disseminated information to schoolchildren surrounding habitat of this species about conservation of White-shouldered Ibis and trained University students in bird research. In order to get easier in explaining to local people and easier for local stakeholders to remember, the team didn't use the name White-shouldered Ibis Project 2003 as the title of this project but used Ibis Karau Project 2003. Ibis Karau is Indonesian name for White-shouldered Ibis.

B. AIMS AND OBJECTIVES

The aims of this project were (1) to reveal detail information of White-shouldered Ibis eco-biology and (2) to set up network for local participative-monitoring system in order to conserve White-shouldered Ibis and its habitat in East Kalimantan.

Objectives from this project were:

(1) Detail Information of White-shouldered Ibis Eco-biology on

- Spatial and seasonal distribution
- Specific habitat use
- Behavior
- Relationship between White-shouldered Ibis with local inhabitant (Ethno-zoology)

(2) To set up network for local participative monitoring system in order to conserve White-shouldered Ibis

- Reveal local people perception regarding conservation of White-shouldered and its habitat.
- Discussion with local stakeholders

METHODOLOGY

A. ECO-BIOLOGY RESEARCH

A. 1. Population and Distribution

Direct observations by motorize boat were carried out to determine the White-shouldered Ibis distribution and population. The team used transects methods by using river stream as transect line. There were four transects namely Datahbilang-Pari river (approximately 42 Km), Datahbilang-Long Iram (approximately 54.5 Km), Datahbilang-Long Bagun (approximately 85 Km) and Datahbilang-Ratah river (approximately 35.5 Km). These transects were chosen based on previous research in 2001 (Sutrisno & Imanuddin 2001). Each transect had been surveyed for 8 times during research on distribution and population.

The team also carried out observations in the other sites where local people spotted the White-shouldered Ibis. The additional locations in this research were upstream part of Ratah River until Bato River, upstream part of Pari River until SP 1, and on Kelay River in Berau regency from Tumbit melayu village until village of Mrasak. The team also visited Nyawatan River and Kedang Pahu River in Damai region.

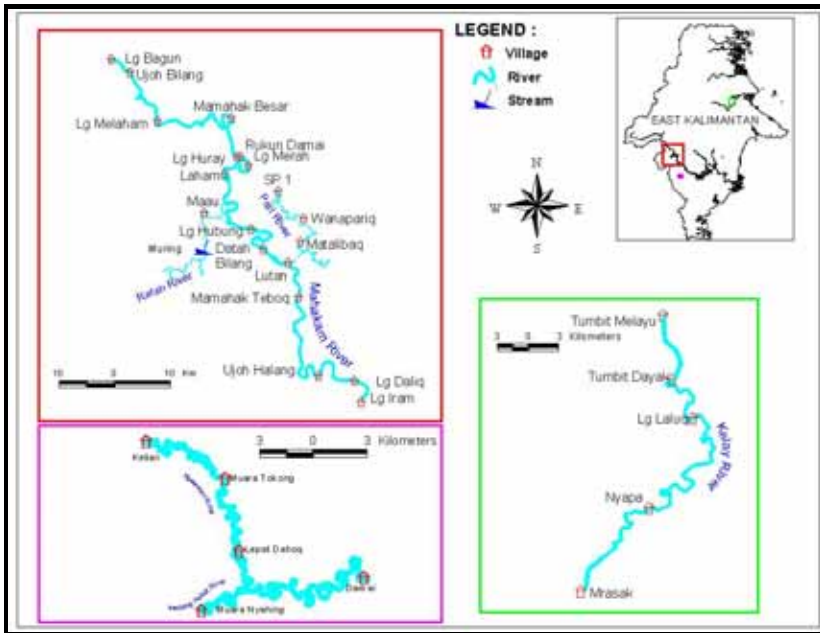


Figure 1. Survey Area

A. 2. Behavior

Scan sampling methods were used to collect behavioral data. Observation time was taken between 6 am and 6 pm. A total of 3382 minutes was taken for behavior observation.

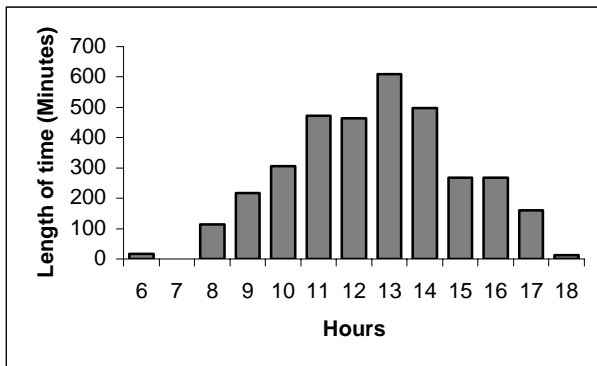


Table 1. Distribution of Observation Time

Collected behavioral data included time, amount of individuals, activities and location. Breeding behavior was observed by using vocal animal sampling methods.

A. 3. Habitat

Circular plot sampling method was used to analyze vegetation on the roosting tree of White-shouldered Ibis. Habitat analysis used to record typical habitats related to the activities of White-shouldered Ibis such as foraging sites, resting and roosting sites. The team took several samples of resting tree by measuring tree height and distance to the nearest tree. Other habitat types used by White-shouldered Ibis were analyzed descriptively from direct observation. Time of habitat utilization for White-shouldered Ibis was collected at the same time with behavior observation.

A. 4. Homorange

To identify the homorange of White-shouldered Ibis, the team used three observation points or groups of White-shouldered Ibis, namely at Merah, Ratah and Bilung. Merah and Ratah points were sample of breeding family and Bilung point is a sample of adult group.

To estimate the homorange of White-shouldered Ibis, The team used the outer position that can be observed. From several outer positions the team made polygon as representing minimum size of homorange of White-shouldered Ibis.



Figure 2. Eco-biology Research Activities

A. 5. Ethno-zoology and Local Perception

Semi-guided interview utilized to assess the level of knowledge of local people on White-shouldered Ibis existence and their culture related to this species. Other information related to White-shouldered Ibis was also recorded during interview such as the advantage of White-shouldered Ibis for local people. Sets of questionnaires were distributed to local people to reveal local perception related to conservation of White-shouldered Ibis and its habitat in East Kalimantan.

The team chose the respondents randomly with an assumption that they lived in village nearby the habitat of White-shouldered Ibis. The team visited 11 villages, namely Ujoh Halang, Long Kelian, Mamahak Teboq, Matalibak, Lutan, Datahbilang, Long Hubung, Laham, Rukun Damai, Long Huray and Mamahak Besar. From those villages the team conducted interviews to a total of 129 persons.

B. PUBLIC AWARENESS

Public awareness activities were conducted through discussions and within interview with local stakeholders; to increase the awareness of the local stakeholders and gain their commitment on White-shouldered Ibis conservation.

The White-shouldered Ibis Project 2003 conducted Birdwatching and monitoring training for providing research and monitoring methods and techniques to enable local young scientist to conduct continuous monitoring and research in birds. As organizer of this training, was fully conducted by BUMI foundation, a local NGO in East Kalimantan.

This training was conducted in two days. On first day, the activity was carried out in Meranti Room, Faculty of Forestry-Mulawarman University and on the second day, training was conducted at Unmul Samarinda Botanical Gardens.

To enhance public awareness, the team conducted school visits program for schoolchildren nearby the habitat of White-shouldered Ibis in East Kalimantan. It was planned to visit 6 schools from three schools level, Elementary School, Junior High School and Senior High School. In practice the team visited 12 Schools including five elementary Schools, Four Junior High Schools and three Senior High Schools. In each school, the team targeted one class.



Figure 3. Campaign Media

As campaign media, the team distributed T-shirts, Stickers, Schools bags and Posters to the respondents, training participants and school children.

C. EQUIPMENT

Equipments used for the activities on White-shouldered Ibis Project 2003 were Binoculars (Nikon Action 7-15x35, 8x40 and 10x50; Two pairs of BUSHNELL Xtra-Wide 7x32), Field Scope type Nikon ED 20-45x with tripod Type SLIK for research on population and distribution, and behavior also as training tools in Birdwatching training; GPS Garmin III-Plus for position marking of distribution, home range and habitat; Camera Nikon FM2 with NIKKOR lens 50 mm and VIVITAR LENS 100-300 mm strengthened by 2x TOKINA converter for documentation; compass, altimeter and phy-band for habitat analysis, Alcohol 70% for leaf and worm specimens.

The team used motorized canoes with 9 HP engine BRIGGS and STRATTON for transportation during activities.



Figure 4. Motorize Canoes Used during Activities

RESULT

A. POPULATION AND DISTRIBUTION

During distribution and population research, the team located the existence of White-shouldered Ibis in East Kalimantan only in West Kutai Regency or specifically only covering district of Long Iram, Long Hubung and Long Bagun. The location where White-shouldered Ibis encountered in this research was still around location where White-shouldered Ibis were encountered in 2001.

Table 2. Number of Encountered Individuals of White shouldered Ibis

NO.	COORDINATE	NUMBER OF INDIVIDUALS	LOCATION
1	00 ⁰ 22'N 115 ⁰ 26'E	2 adult, 1 sub adult	Merah River Estuari
2	00 ⁰ 06'N 115 ⁰ 31'E	2 adult	Downstream of Kedawan Camp Logpond
3	00 ⁰ 12'N 115 ⁰ 28'E	9 adult	Bilung islet, downstream Datah Bilang village
4	00 ⁰ 02'N 115 ⁰ 33'E	3 adult	Downstream Ujoh Halang Village
5	00 ⁰ 17N 115 ⁰ 23'E	2 adult, 2 juvenile	Ratah river

The largest group of White-shouldered Ibis encountered in one observation was about 1.5 Km downstream of Datah Bilang village, the team encountered 9 individuals. In several occasions the team encountered the species in these sites with different number of individuals, but mostly were seen 9 individuals.

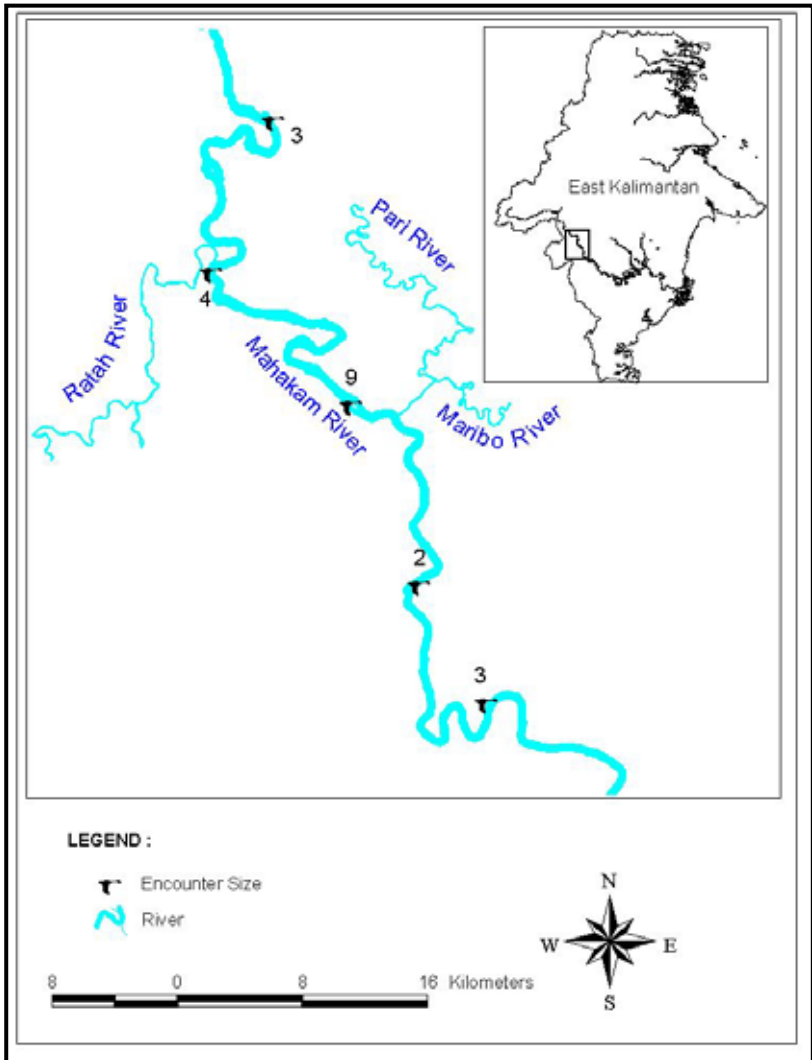


Figure 5. Encountered Location of White-shouldered Ibis

These locations were summary of 57 encountered of White-shouldered Ibis during the research; the other remaining position is adjacent to the coordinate mentioned on the Table 2. With these encountered data, the team concluded the minimum population size of White-shouldered Ibis in East Kalimantan were 21 individuals with three individuals were sub adult.

The presence of White-shouldered Ibis did not influence by the seasons; but it's influenced by rise and fall of the river tides. The White-shouldered Ibis will be more difficult to be encountered at high tide where there is no mud flat or gravel yard or at low tide where there is no wet mud flat.

B. BEHAVIOR

During 3382 minutes of observation, most of time of White-shouldered Ibis spent for resting activities (41.29%), then for foraging (27.7%), body care (16.36%), locomotion (13.05%) and White-shouldered ibis spent 1.59% of their time to conduct social activities (Table 3).

The White-shouldered Ibis used all types of habitat. There were two types of resting activities, standing and sitting. For body care, the White-shouldered Ibis activities are preening, sunbathing and bathing.

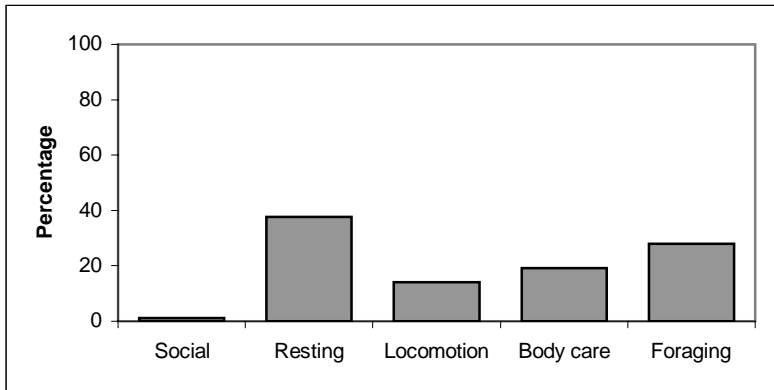


Table 3. Behavior of White-shouldered Ibis

Preening activities were conducted on the tree, gravel, mudflat, and sand banks; also that can be conducted during foraging and resting. The White-shouldered Ibis conducted sunbathing and bathing on the gravel. They conducted bathing by inserting the head first to the water then followed by the body like duck. Their sunbathing is only just standing silent or by opening a half of their wing forming delta wing.



Figure 6. Body Care activities (A. Preening; B. Sunbath; C. Bathing)

The White-shouldered Ibis foraged in mudflat and sand banks by tactile location. The White-shouldered Ibis walked slowly; if they found a worm then they inserted their bill in to the mud and pulled out the worm. Sometimes while the bill was still in the mud; they still searched for the worm by pecking the mud. After they found the worm, they pulled out the worm and after that there were three different activities. First, they put the worm on the surface of mud later on they ate it. Second, after they pulled out the worm directly they ate the worm and third they brought it first to the water to clean it before eaten. Foraging behavior in the gravel was also by pecking and flipping, by turning over the rock and gravel to search the prey.

The White-shouldered Ibis swallow the prey by throwing the prey to the air among their upper and lower mandible then they catch it by moving of the head like nodding.



Figure 7. Foraging Behavior (A. on the Mudflat; B. On The Gravel)

C. BREEDING BIOLOGY

The team found two active nests during this research, these two active nests were about 10.65 Km distance and in different time.

The first nest was discovered at the first time on 4 October 2003 already incubated (with one juvenile) and the other nest was discovered on 10 December 2004 (with two juvenile). The team identified incubation periods for White-shouldered Ibis in East Kalimantan about 29-31 days and fledging periods took about 36 days. The eggs hatched asynchronous and the chicks were semi-altricial. The color of eggshell was pale blue. The body of male of White-shouldered Ibis is bigger than female; it can be identified during copulation.

The nests were placed in 30.2 m height. They were made of branches and twigs with fresh leaves. The team only observed the nest materials collected from nest tree, the team once saw White-shouldered Ibis flew to the nest with twig in its bill but could not be identified from which tree those twig was taken.

Both parents looked after the chicks. They took turned to brood and feed the chick. Also when the young started to fledge, both parents looked after and guided the juvenile.



Figure 8. White-shouldered Ibis in the nest

The chick was fed directly by taking the food from the parents' bills, at the first week; the parents guided the chick bill to entering the parents' bill and received the food. The Juvenile of White-shouldered Ibis performed begging behavior when they asked food from their parents by walking around the parents, nodding the head and moves its wings like a half flapping.

The White-shouldered Ibis chick had light yellow legs, color of iris black with short of tortuous bill and collar already exist with white pale color. About 19 days after hatching, its body was still covered by down feathers and was replaced by contour feather colored dark brown and the color of legs were blackish light yellow approximately after day 22. Starting from here the juvenile started to flap their wings, walked out to the nearest branch and fledging for the first time approximately in day 36.

To keep the nest clean, the White-shouldered Ibis defecated on the edge of the nest. There were no observed of activities of cleaning the nest.

D. DIETS

The main diet of White-shouldered Ibis is a species of worm from genus *Pheretima sp.* This worm is abundant along Mahakam River. This worm can be identified from their faeces along mud flat. This usually emerges in the wet mud after high tide.

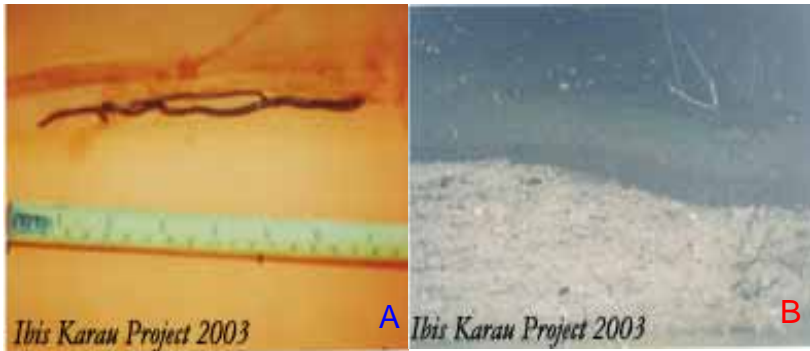


Figure 9. A) Worm as main diet of White-shouldered Ibis; B) Faeces as worm indication

E. HABITAT

Generally the habitat of White-shouldered Ibis is in Secondary riverine forest. Along Mahakam River where used to be habitat for White-shouldered Ibis has already been owned by local inhabitant as their unirrigated agricultural field by shifting cultivation methods and the forest concessionary as their log yard. This condition is very apprehensive for the future of White-shouldered Ibis.

The White-shouldered Ibis spent their times in four types of location, namely tree, gravel yard, sand banks and mud flat. From these four types of location, White-shouldered Ibis spent mostly in the tree (58.41%), in the gravel about 28.53%, in mud flat about 10.54% and in sand banks about 2.53% as shown in Table 4.

The characteristics of the nest tree were close to the river stream and emergent tree in the area. From two encountered active nests,

both pairs used *Koompassia exelsa* as nest tree. This can be explained as *Koompassia exelsa* or “Bangris” tree in local name can be referred to undisturbed tree in the area because local people believed that the tree is used for honeybee to build their nest. The height of nest tree in average is 41.5 m.

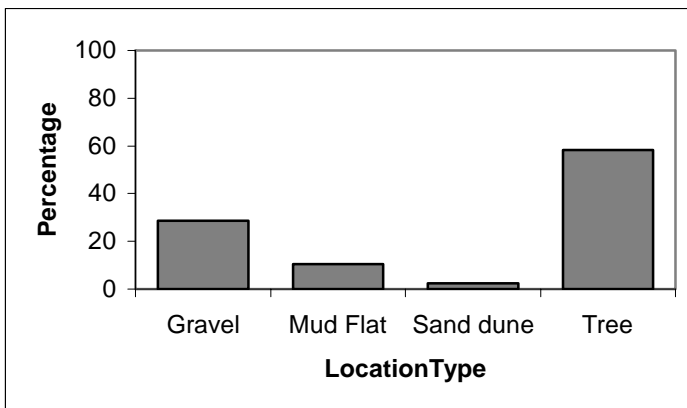


Table 4. The Use of Location Types (n=3382 minutes of observation)

The nest tree in Merah Estuary was approximately 10.4 m from the edge of the river (Mahakam River). This nest tree was surrounded by secondary riverine forest. About 500 m upstream to the nest tree already cleared up for log pond site and about 500 m downstream were unused old log pond.

The nest tree in Ratah River was located approximately 60 m to Ratah River and about 4 Km to the Ratah Estuary. The nest tree was located on the land owned by local people that not being cultivated in their shifting cultivation system.

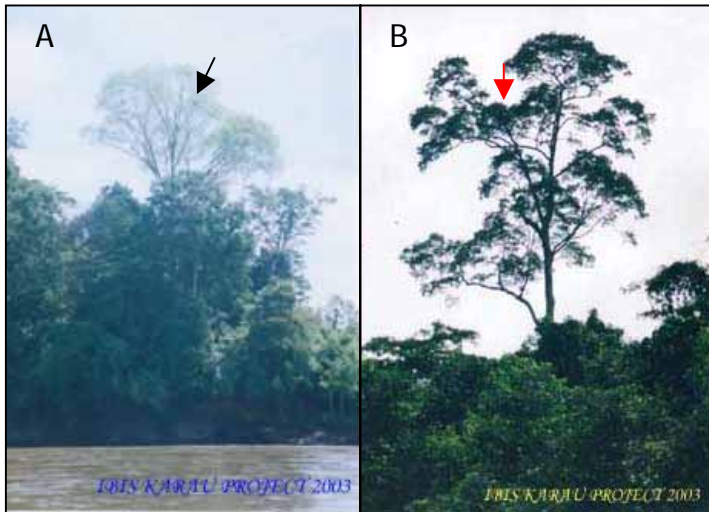


Figure 10. Nest Tree Profile (A. At Merah River; B. At Ratah River; the Arrow Indicates Nest position)

The White-shouldered Ibis used various tree species to perch such as *Octomeles sumatrana*, *Pterospermum elongatum*, *Paraserianthes falcataria*, and *Durio sp.* The White-shouldered Ibis preferred tree with thick canopy or emergent tree.

The White-shouldered Ibis used dead tree and life tree as roosting trees. They used *Koompassia exelsa* as their roosting tree. Like the nest tree, the White-shouldered Ibis used the emergent tree and near by the river or inundated area.

The White-shouldered Ibis foraged in the mud flat, sand banks and at the edge of gravel yard. Foraging sites condition of White-shouldered Ibis on the mud flat is wet muddy and surrounded by scrub vegetation also indicates by presence of worm faeces.

Foraging sites on the sand banks is near to water bodies or around grass vegetation. The foraging site on the gravel is near or in water bodies with water level is under legs of White-shouldered Ibis.



Figure 11. Foraging Sites (A. gravel; B. Mud Flat; C. Sand Banks)

The team also discovered the White-shouldered Ibis in Mahakam River using ex log pond area located near estuary of Ratah River and one local people mentioned that she saw the White-shouldered Ibis in her paddy fields near Pari River estuary. This information explained that river and its watershed have an important role for the White-shouldered Ibis.

F. HOMERANGE

The estimation of three observation points for sampling of the Homerange of White Shouldered Ibis in East Kalimantan shows that the homerange of White-shouldered Ibis in Bilung area 20.2 Km², in Merah 24.1 Km², and in Ratah 54.2 Km² (Figure 10). Based on these three homeranges, it can be concluded that the average homerange of White-shouldered Ibis is about 32.8 Km².

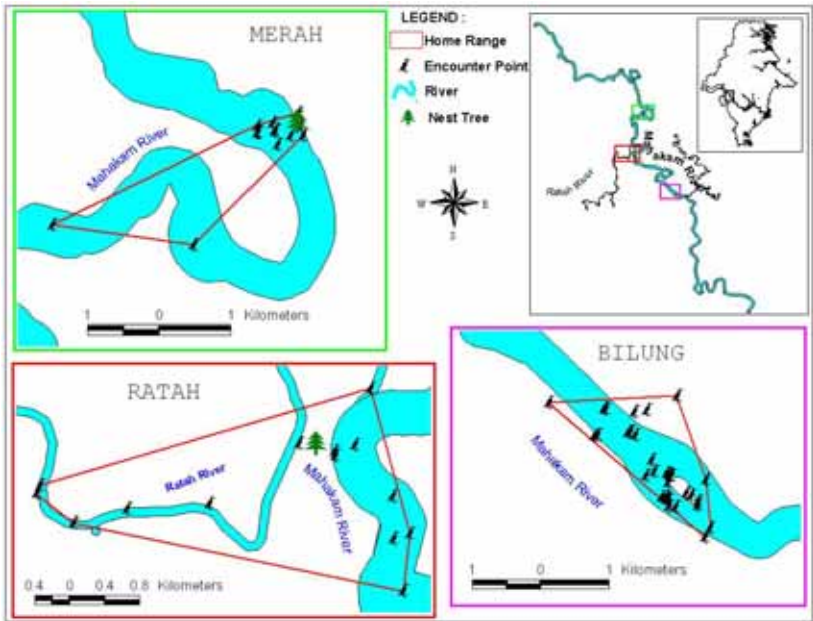


Figure 12. The Homerange of White-shouldered Ibis at three Sites

G. ETHNO-ZOOLOGY AND LOCAL PERCEPTION

From 129 persons were interviewed, there were 6 respondents admitted never saw the White-shouldered Ibis and 123 respondents have seen it.

Table 5. Respondents of ethno-zoology and Local Perception

No.	Items	Options	Amount of Respondent
1	Sex	Male	107
		Female	22
2	Age	17 - 25 Years Old	11
		26 - 35 Years Old	36

		36 - 45 Years Old	42
		> 46 Years Old	40
3	Formal Education	Elementary School	61
		Junior High School	29
		Senior High School	26
		Diploma or Bachelor	6
		Uneducated	7

There were 84% of respondents who knew the name of White-shouldered Ibis at least local name and 11% didn't know the name like shown on Table 6.

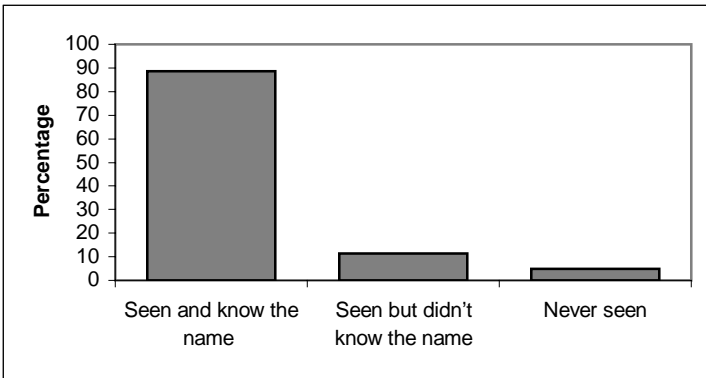


Table 6. Information of Encountered Records of White-shouldered Ibis

Seventy eight percent of 123 respondents mentioned that they often encountered with the White-shouldered Ibis and 22% mentioned that they seldom encountered with White-shouldered Ibis as shown on Table 7.

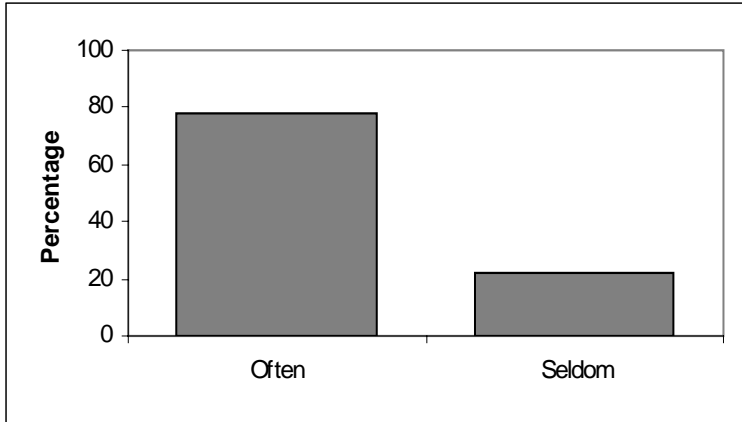


Table 7. Information of Encountered Intensity

This table shows that local people are familiar with the White-shouldered Ibis although they didn't recognize the name of White-Shouldered Ibis. Because the species is common to be called with "Bangau hitam" or Black storks in English refers to the color of its feather and as different from "Bangau putih" or White stork as called for egrets.

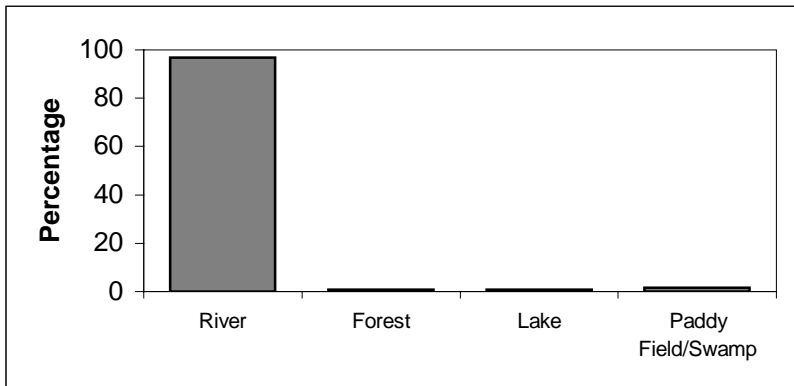


Table 8. Information of Encountered Location

From their encounter's, 96% respondents mentioned that they usually saw the White-shouldered Ibis in the river, 1% at the forest, 1% at the lake and 2% at the paddy field as shown on Table 8.

Most of respondents (96%) mentioned that the White-shouldered Ibis were more easily spotted at low tide than at the high tide (4%) as shown on Table 9. It can be explained because at the high tide, locations where White-shouldered Ibis conducting their activities such as mud flat or gravel yard were submerged.

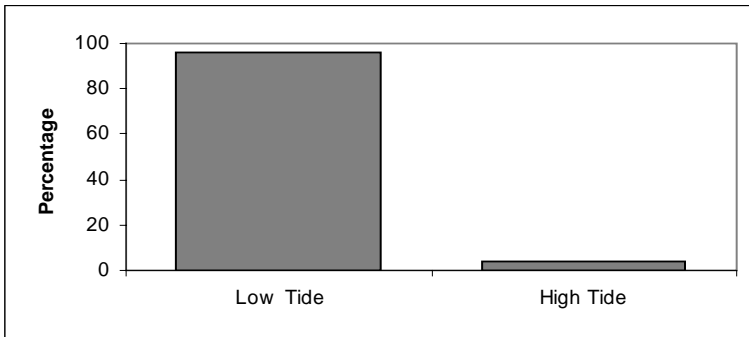


Table 9. Information of Encountered Time

In 1997/1998 almost 10 billion hectares of forest in Indonesia including the forest along Mahakam River were on fire because of El Nino effect (FWI/GFW 2001). When respondents were asked about the impact of those forest fires to the existence of White-shouldered Ibis, 85% respondents mentioned that they often encountered the white-shouldered Ibis before the forest fire. This percentage decreased into only 43% respondents who mentioned that they often encountered white-shouldered Ibis after the forest fire (Table 10). It shows that forest fire occurred in 1997/1998 had impact to the existence of White-shouldered Ibis in East Kalimantan.

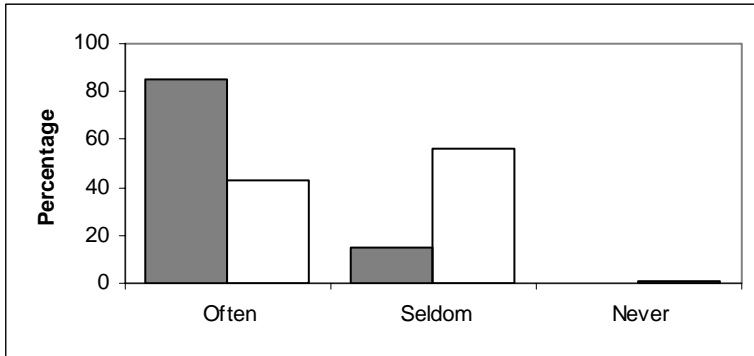


Table 10. Information of Encountered Intensity (Dark Bar= Before 1997; White Bar= After 1997)

The results of interviews on diets of White-shouldered Ibis, 77% respondents mentioned that the diets of White shouldered Ibis is worm, then 15% mentioned fish as its diets, respondents who mentioned insects as White-shouldered Ibis diets about 3%, who mentioned worm and insects 2%, fish and insects 1% and about 2% of respondents didn't know the diets of White-shouldered Ibis (Table 11).

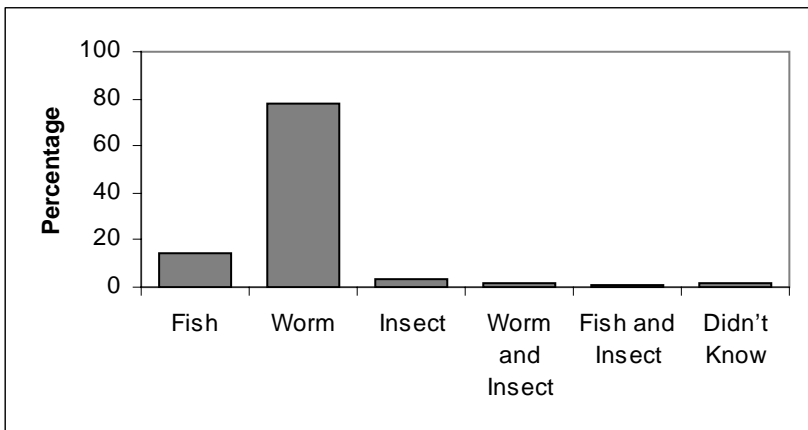


Table 11. Information of White-shouldered Ibis Diets

As shown on Table 12, about 87% of respondents mentioned that they never saw any hunting activities of white-shouldered Ibis and 6% of respondents often saw hunting activities and 7% seldom saw hunting activities.



Table 12. Information of Hunting Activities

Unfortunately, most of the respondents (99%) didn't know that Indonesian Law has protected the White-shouldered Ibis as shown on Table 13.

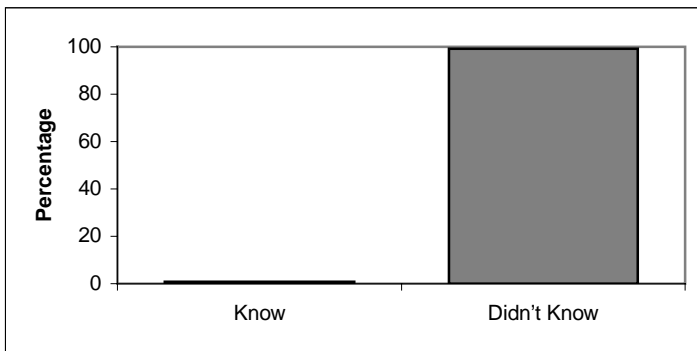


Table 13. Information of Protection of White-shouldered Ibis by government Law

There were no tribes regulation mention about White-shouldered Ibis specifically or arranging treatment to this species as shown on Table 14.

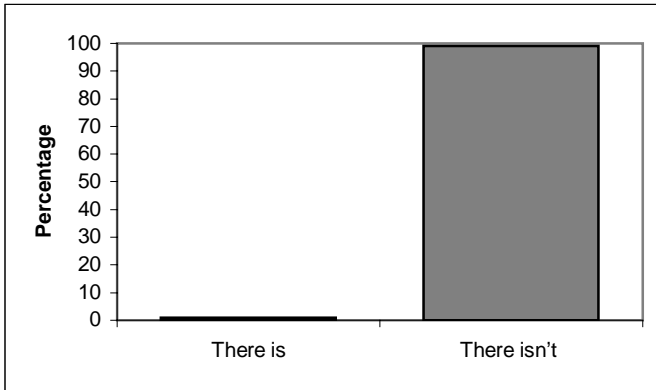


Table 14. Tribes Regulation

There was no culture relationship between local people tradition with White-shouldered Ibis, whether it is carving, singing, dancing or such else (Table 15).

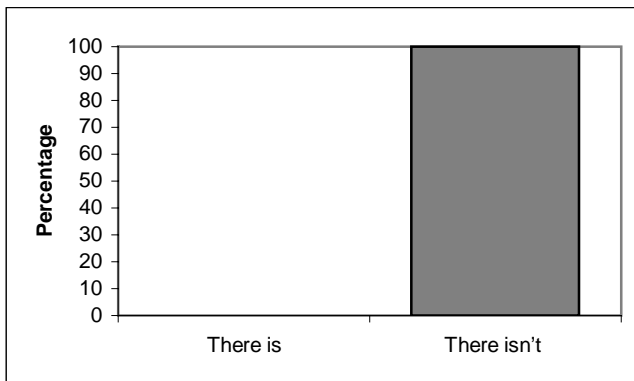


Table 15. Culture Relation



Figure 13. Interviews Activities

H. BIRDWATCHING AND MONITORING TRAINING

The Birdwatching and monitoring training were conducted on 17-18 March 2004 and attended by 23 participants. Most of the participants were undergraduate students and one came from Senior High School. In the first day training, participants were given information from 4 speakers, about introduction of Ornithology and Water bird by Miss Dijan as a lecturer in Faculty of Science-Mulawarman University, Ecology of Indonesian birds and bird Conservation in East Kalimantan given by Dr. Chandradewana Boer as a lecturer in Faculty of Forestry-Mulawarman University, Edy Sutrisno as The team leader representing The team of White-shouldered Ibis Project 2003 gave information about Bird Monitoring technique and explanation about the Project including highlight of BP Conservation Program. As the last speaker, Rustam Fahmi as BUMI staff gave information about relation between environmental education and bird conservation.

In the second day, participants were asked to conduct field simulation of monitoring and birdwatching. This activity was closed with discussion about participant experiences during simulation.



Figure 14. Birdwatching and Monitoring Training Activities

I. SCHOOL VISIT

A total of 391 participants were recorded for school visit. This number consisted of 106 participants in Elementary Schools, 160 participants in junior High Schools, and 125 participants in Senior High Schools.

Activities during School visits, for the first time the team gave questionnaire to the participants about how much they know about White-shouldered Ibis. From their answers, the highest percentages of interview results mentioned that they know those species but didn't know its name. From these three options of answer, smallest percentage has answered to know the name of White-shouldered

ibis. This is shown in all school level as shown on Table 16.

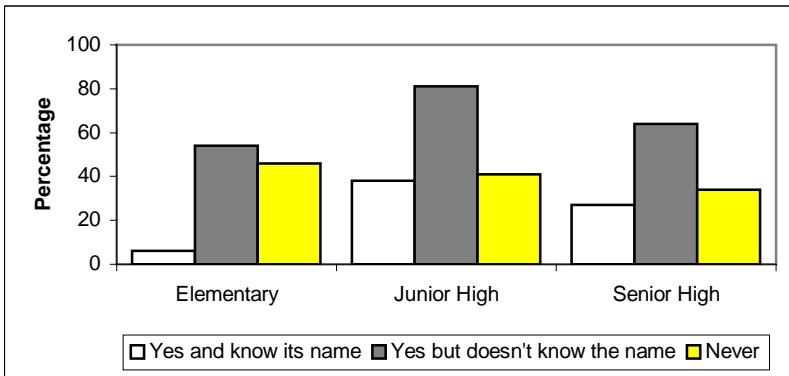


Table 16. Encountered Records by School Children

Most of the students mentioned that they have seen the White-shouldered Ibis in the river, while other mentioned in rice field, lake and forest. This can be seen on Table 17.

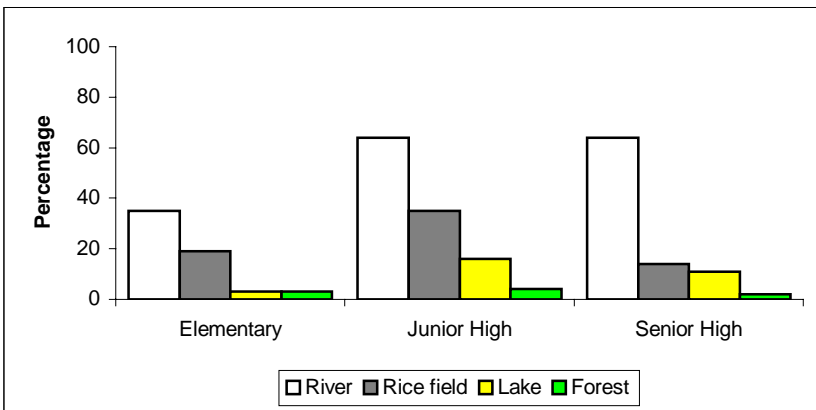


Table 17. Encountered Location by Schools Children

The highest percentage answers of White-shouldered Ibis diets were fish, then fish and worm. It is student's answer of elementary and

Senior high school while the second highest answer percentages at junior high answered is only worm. This is shown on Table 18.

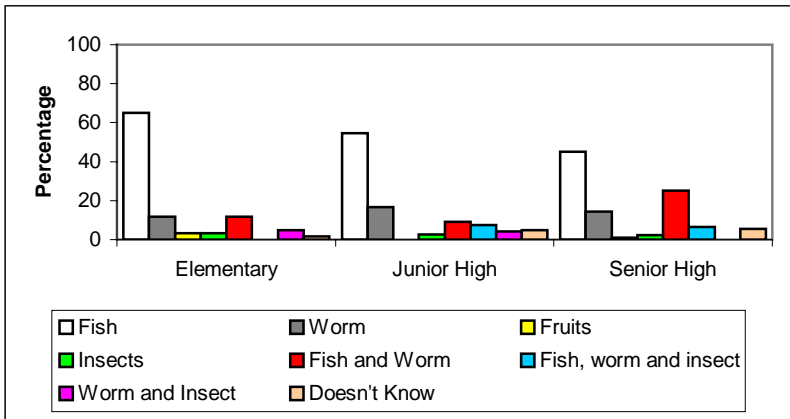


Table 18. Knowledge on the Diets of White-shouldered Ibis by Schools Children

Most of students answered that there were no hunting activities to this species. However, school children, whose have not seen hunting activities of White-shouldered Ibis in all level of schools are more than 50% as shown on Table 19.

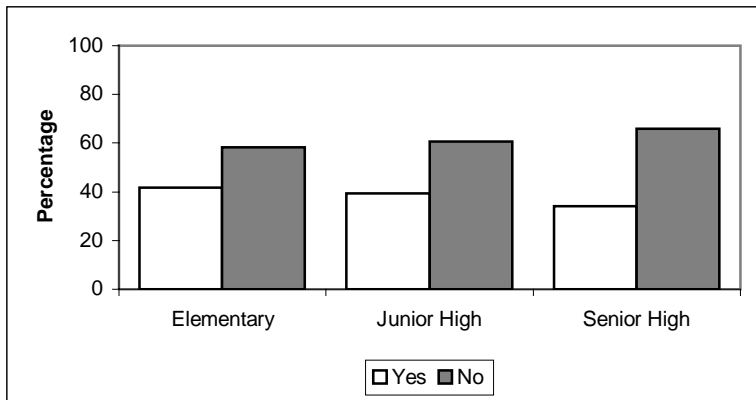


Table 19. Knowledge on Hunting Activities of Schools Children

When all respondent students asked about agreement to hunting activities, most of all students (more than 50%) answered hunting activities should be prohibited (Table 20).

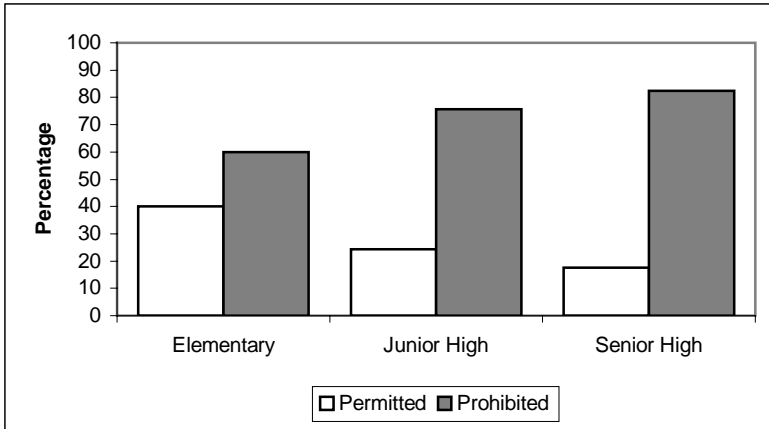


Table 20. Attitude of Hunting Activities

Information on WildLife protection regulation to schoolchildren is still lacking. It can be proved from student answers, more than 70% in all school level didn't know about this as shown on Table 21.

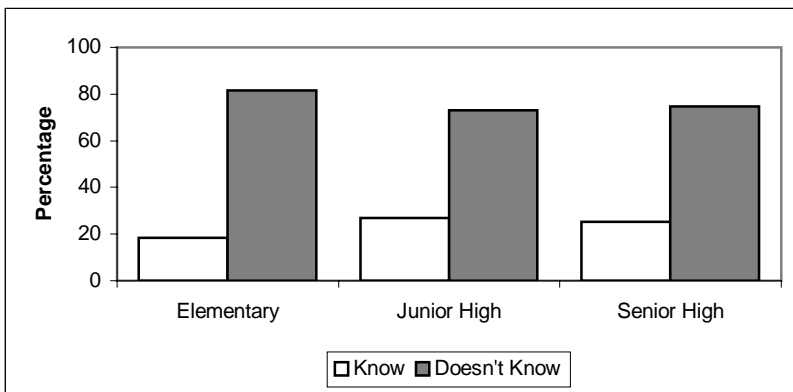


Table 21. Protection Regulation by School Children

Various percentages of answers emerge from question what effort should be conducted to conserve the White-shouldered Ibis. In junior high and senior high schools the highest answering percentages is protected in forest, meanwhile at elementary level the highest answering percentages that they don't know what effort should be conducted to conserve White-shouldered Ibis. The percentage of this answer is shown on Table 22.

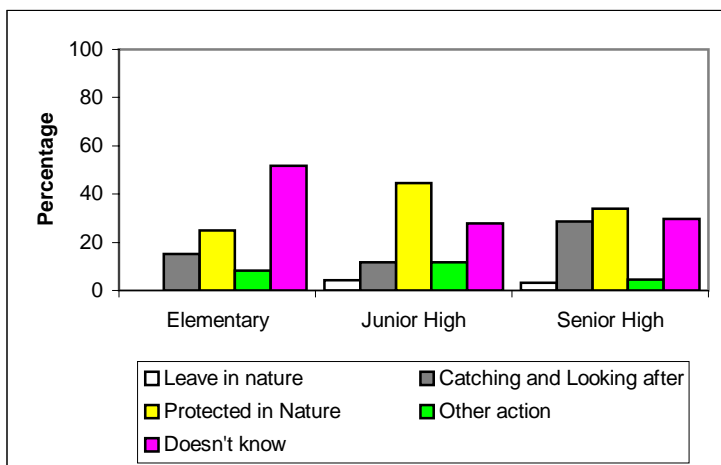


Table 22. Conservation Effort by Schools Children

After they filled in the questionnaire, the team gave explanation about the White-shouldered Ibis and its conservation status. The team used flipchart as interpretation media. This session continued with discussion session, participants had chances to ask about the information given by the team before. After that, the team gave door prize to the participants who could answer the question asked by the team. These questions were asked based on the information given before.



Figure 15. School Visits Activities

J. THREATS

The serious threats for White-shouldered Ibis were forest clearance and land degradation. The impact of forest clearance, especially along the river is an extension of river width and silting up the river. This has implication during rainy seasons the river will be easier to overflow and at dry season, drying up is easier to happen. Smoke from the forest fire also has an impact to the White-shouldered Ibis. Fishing activities through poisoning have indirect impact also riverboats and motorized canoes, especially when the White-shouldered Ibis foraging.

The ignorance of local people and local government to the status of White-shouldered Ibis, culture inexistence in local people traditions together with direct benefit inexistence of White-shouldered Ibis for local people have made a very low local people awareness to this

species. Therefore it can be a serious threat to the existence of White-shouldered Ibis in East Kalimantan.

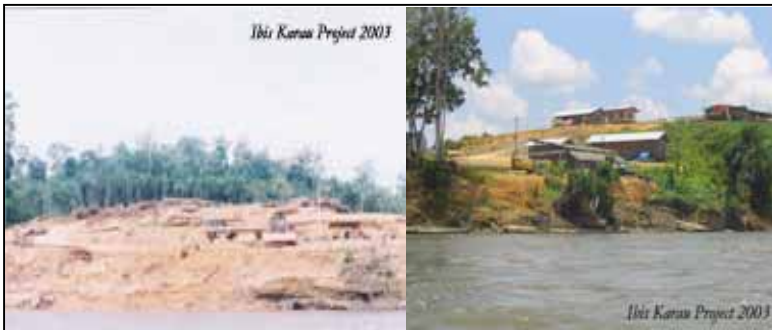


Figure 16. Forest Clearance as serious threat

Another threat for White-shouldered Ibis in East Kalimantan is all identified areas as habitat of White-shouldered Ibis were not conservation areas but already privately owned such as unirrigated agricultural land and logging pond.

CONCLUSION

1. Distribution of White-shouldered Ibis in East Kalimantan only spread along Mahakam River within West Kutai region.
2. From 57 encounters, minimum population of White-shouldered Ibis in East Kalimantan is 21 individuals with the largest groups discovered were nearby Datah bilang village.
3. White-shouldered Ibis used four types habitat namely Tree, gravel banks, mud flat and sand banks. From those types of habitat, White-shouldered Ibis spent most of the times in the tree.
4. White-shouldered Ibis used *Coompassia exelsa* as nest tree; with average tree height 41.5 m and nests were placed on the average height 30.2 m.
5. White-shouldered Ibis spent most of their times for resting, consecutively foraging, body care, locomotion and social activities.
6. The breeding season for White-shouldered Ibis in East Kalimantan occurs from October until February. The male was bigger than female.
7. White-shouldered Ibis incubates for 29-31 days and fledging takes about 36 days. The color of its egg shell was pale blue
8. The main diet of White shouldered Ibis is earthworm from genus *Pheretima sp.*
9. Minimum habitat requirement of White-shouldered Ibis based on its homerange about 32.8 Km.
10. There was no culture relationship between White-shouldered Ibis and local people culture.

RECOMMENDATION

For further White-shouldered Ibis conservation in East Kalimantan and in Indonesia, it is strongly recommended to conduct:

1. Monitoring habitat and population of White-shouldered Ibis in East Kalimantan
2. Surveys on other location identified as habitat of White-shouldered Ibis, like in Central Kalimantan and South Kalimantan.
3. Research on detail and comprehensive of homerange
4. Protection on nest tree
5. Protection on Water shed
6. Recovery of degraded habitat
7. Intensively of dissemination information of status and condition of White-shouldered Ibis to local communities and local government
8. Implementation of local participation scheme

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Biodiversity Conservation Indonesia
Jl. Paus 8A Kompleks IPB Sindangbarang I Loji
Bogor-Indonesia
bci@indo.net.id