

**Daily Activity and Homorange of
Whiter Bellied Sea Eagle (*Haliaeetus leucogaster* J.M.Gmelin, 1788)
On The Begining of Breeding Season in Yu Island,
Kepulauan Seribu National Park, Indonesia**

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Abstract

White bellied sea eagle *Haliaeetus leucogaster* J.M. Gmelin, 1788 have important role in the nature, as prey population control. The existence also can use for indicator of ecosystem quality. One of the last habitats of these species in Java Island is Kepulauan Seribu National Park. One of nesting location of White bellied sea eagle is Yu Island which 5,9 Hectares wide and geographically lies on 106°31'15.4" East Longitude and 05°32'59.2" South Longitude. Nest position is about 35 m high at Casuarina tree (*Casuarina equisetifolia*). The tree is about 40 m high and 20 m from the coast line.

Base on field survey with direct observation method to know the behaviours in the nest protection programme in Kepulauan Seribu, observed that generally daily behaviour's of White bellied sea eagle pair is 63% for perching and 37% for flying. With polygon method, know that homorange of the pair is 13,9 km². There are 4 hunting areas of the White bellied sea eagle pair around the Yu Island.

Key words; White-bellied Sea-eagle, daily activity, Kepulauan Seribu National Park

Preface

The position of birds of prey in the ecosystem is a top predator. They have an important role to control the prey pupolation. They are very sensitive with the environmental change, so they also can use for indicator of ecosytem condition (Prawiradilaga dkk., 2003).

Kepulauan Seribu National Park is one of the marine national park in Indonesia. It cover about 78 islands from 110 islands in the Kepulauan Seribu area. This area is one of the last habitat of White bellied sea eagle (*Haliaeetus leucogaster* J.M.Gmelin, 1788) in Java Island.

White bellied sea eagle is the biggest raptor in Indonesia. Its body length 70-85 cm and 178-218 cm wing span. The body weight is about 1,8-2,9 kg for male and 2,5-3,9 kg for female. The colour of dorsal is steel blue and the belly, head and neck is white. The iris is brown. Claw, bill, and cere are grey. Leg without feathers and feet colour is grey. When they fly, the tail is short and looks like wedge and the wing rise up as V form (Coates & David, 2000; Beehler *et. al.*, 2001; Kemp dalam Newton, 1990; Prawiradilaga dkk., 2003).

The biggest threats of White bellied sea eagle existence in the Kepulauan Seribu National Park are hunting, degradations habitat, eaglet robbery, and pesticide. So it's very important to do nest protection programme to protect the White bellied sea eagle's nest in the breeding season.

Methods

Research start by foraging of White bellied sea eagle nest in Kepulauan Seribu National Park area by semi-structural interview with local people and National Park ranger. After the nest found, advanced research is direct observation from the closest location by binocular and monocular.

Direct observations done on March-July 2007 when the breeding season of White bellied sea eagle started. The breeding season of White bellied sea eagle is around May-September in every year. Observation in everyday start in the early morning till dusk (06.00-18.00) with 3 minutes interval.

Collected data include flying and perching behaviours, hunting locations and estimations of the farthest point.

The data will analyze by simple statistic so we know the percent of daily behaviours, hunting area and homerange of the White bellied sea eagle pair in the beginning of breeding season.

Result and discussion

Base on interview with local people show that one of the White bellied sea eagle nest in the Kepulauan Seribu National Park is in the Yu Island. This island geographically lies on 106°31'15.4" East Longitude and 05°32'59.2" South Longitude. This is an island without citizen and 5,9 hectares wide. The nest lies on the high stratum of Casuarina tree (35 m). The tree is about 40 m high and 20 m distance from the coast line.

Local people said that the eaglet became a victim of robbery by fisherman. It's always happen in every breeding season. This fact is the most important motive to do this programme, to do research and nest protection.

During the observation periods, there are 3 times fishermen activities that want to disturb the nest and White bellied sea eagle pair. The activities are climbing the tree and trapping the pair by fish-hook. Its fortune enough the activities detected by team, so it can be failed.

This above is data about nest and nest tree of White bellied sea eagle (*Haliaeetus leucogaster* J.M.Gmelin, 1788) in the Yu Island (data taken at March, 27th 2007, before breeding season start)

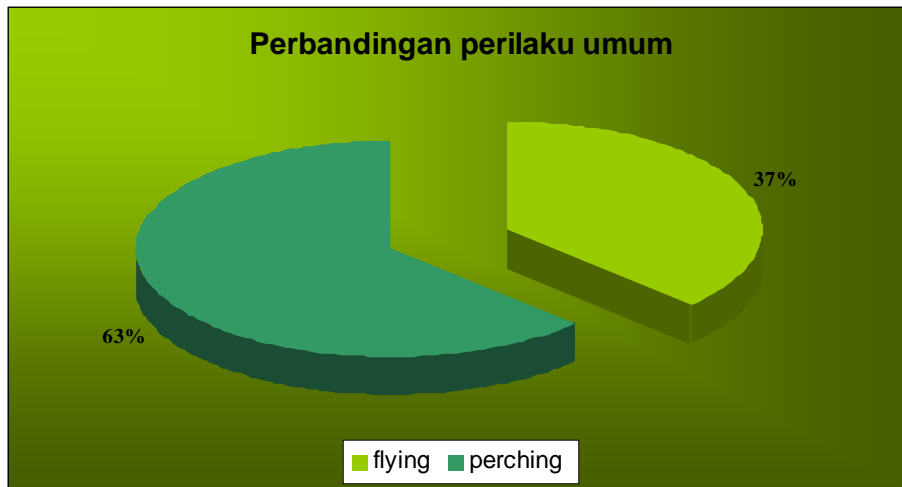
Table 1. Morphometry of White bellied sea eagle's (*Haliaeetus leucogaster* J.M.Gmelin, 1788) nest in the Yu Island, Kepulauan Seribu National Park.

No	Parameter	Result
1	Nest tree species	Cemara laut
2	Coordinate	S 05°32'59.2" E 106°31'15.4"
3	Elevation	1 m
4	Tree circumference	1,8 m
5	Tree high	40 m
6	Nest high	35 m
7	Nest form	oval
8	Nest length	1,65 m
9	Nest width	1 m
10	Inner nest length	0,6 m
11	Inner nest width	0,4 m
12	Nest thick	0,7 m
13	Nest depth	0,1 m
14	Nest material	Plastic rope, string, dry lichen (in the middle of the nest), coral

15	Supporter nest diameter branch	0,47 m 0,36 m 0,36 m 0,15 m
16	Nest composer material	19% » Leafs (Casuarina tree (<i>Casuarina equisetifolia</i>), almond tree (<i>Terminalia cattapa</i>), nyamplung (<i>Calophyllum inophyllum</i>), waru (<i>Hibicus tiliaceus</i>)) 80% » Twig (Casuarina tree (<i>Casuarina equisetifolia</i>), almond tree (<i>Terminalia cattapa</i>), nyamplung (<i>Calophyllum inophyllum</i>), waru (<i>Hibicus tiliaceus</i>), Bamboo lath) 1% » Others (Casuarina fruit, Plastic rope, string, coral, dry lichen)
17	Nest material twig diameter	0,5 cm- 20 cm
18	Nest material twig length	0,5-1 m
19	Nest tree location	Close with the coast line
20	Nest tree distance from coast line	20 m
21	Nest condition	Not active
22	Vegetation around	Coconut tree (<i>Cocos nucifera</i>), Almond tree (<i>Terminalia cattapa</i>), nyamplung (<i>Calophyllum inophyllum</i>), waru (<i>Hibicus tiliaceus</i>), Pandanus tree (<i>Pandanus sp</i>), Casuarina tree (<i>Casuarina equisetifolia</i>), butun (<i>Barringtonia asiatica</i>), Breadfruit tree (<i>Artocarpus altilis</i>)

The data bellow show that the White bellied sea eagle nest in the Yu Island is compiled by many kind of material which came from around the nest. The possibility is they no need special material to build the nest. The material that can't found around the nest naturally (like bamboo lath and string) maybe came from another place taken along by water.

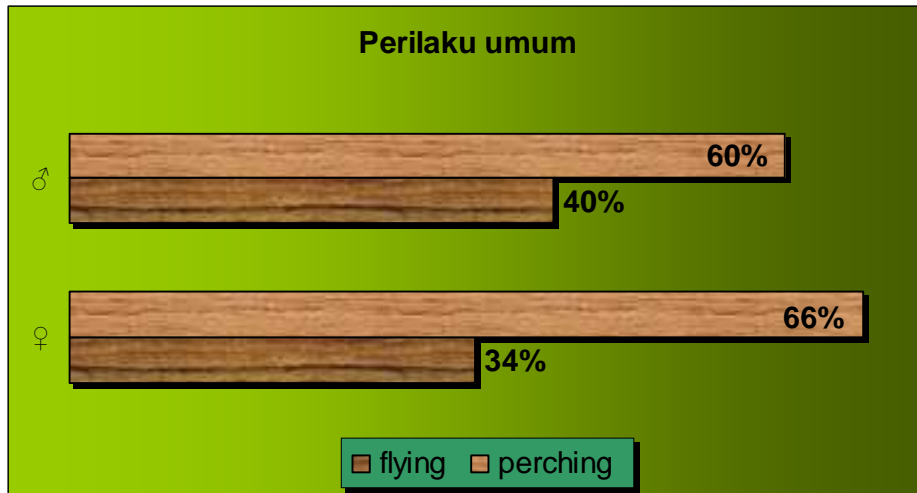
Base on 10 days observation (12-21 July 2007), the comparison result of common behaviour of White bellied sea eagle in Yu Island is like above:



Picture 1. Comparison of common behaviour of White bellied sea eagle in Yu Island

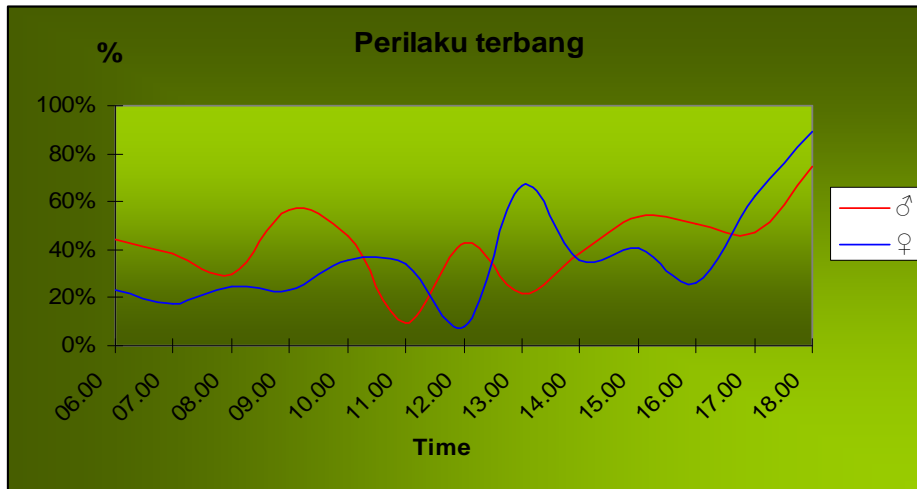
The picture above show that common behaviour of White bellied sea eagle pair in the beginning breeding season is more of perching than flying. They like to perch at the top of the tree to make sure the security of nest position.

Comparison of perching and flying behaviour of male and female White bellied sea eagle show that male more of flying than female (Picture 2). Maybe this is his responsibility to protect the territory.



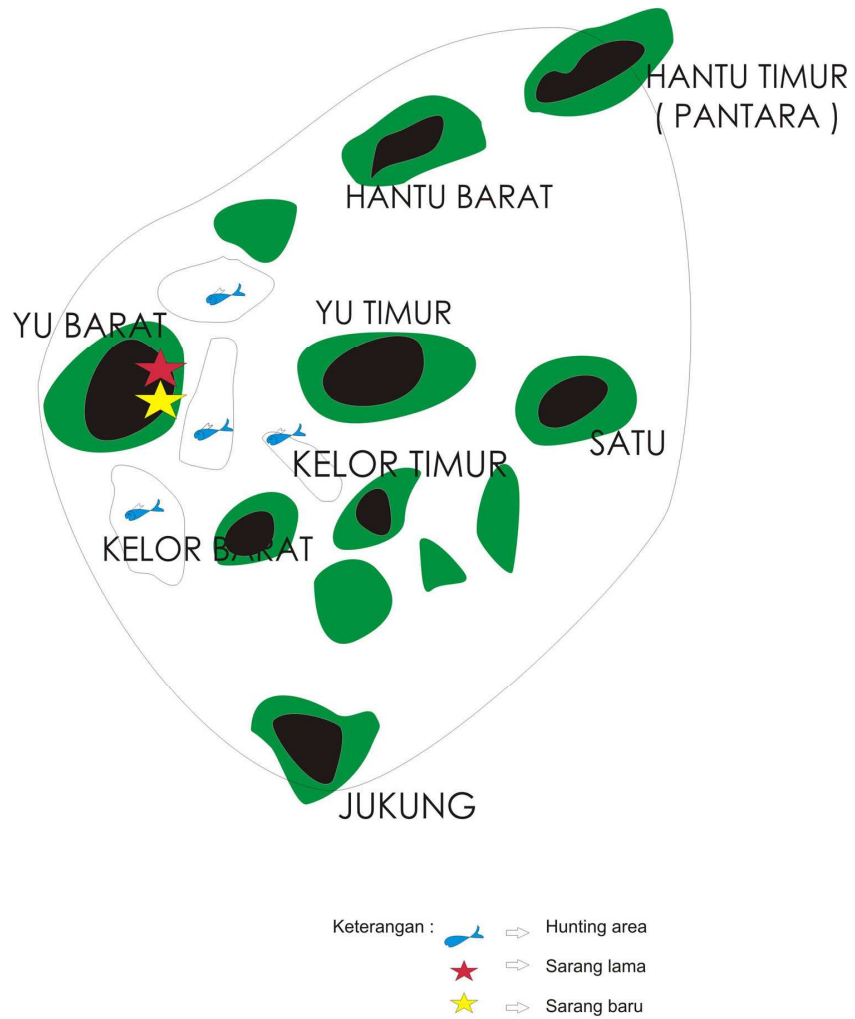
Picture 2. Common behaviour of male and female

Flying behaviour of male and female are different like picture below (picture 3). Male many fly at 09.00, 15.00 and the peak at 18.00, whereas female many fly at 13.00 and the peak at 18.00. The dale of flying behaviour happened at 11.00 (♂) and 12.00 (♀).



Picture 3. Flying behaviour of male and female

This below is homerange of the White bellied sea eagle pair based on the estimation of farthest point reached during observation periods. Its include some of hunting locations where the pair looks hunt.



Picture 4. Map of homerange White bellied sea eagle pair at Yu Island and hunting locations.

After analyze by Grid method, we know that homerange of White bellied sea eagle pair at Yu Island is 13,9 Km².