

Cause of the Death Sea turtle Stranded in Nesting Beach (Paloh, West Kalimantan) Period from February to April 2018

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INTRODUCTION

Coastal Paloh an important habitat for four species of sea turtles are the Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricate*), Olive ridley (*Lepidochelys olivacea*) and Leatherback (*Dermochelys coriacea*). Aside from being a nesting habitat, the area is also a habitat for feeding, and mating habitat and migration path or traffic seaturtle (Suprapti, 2012). Not only for sea turtles traffic has also become important for a variety of vessels between both countries fishing vessels, tankers up cargo. Given the geographic location is directly opposite the South China Sea that is surrounded by several countries.

But unfortunately, the South China Sea is strategically important as well as give a bad condition for Paloh seas. Because the area is the location of the trash stream (marine debris) from various countries who tipped rubbish on the beach strandings Paloh. As for the garbage found a variety of forms, both organic waste and non-organic, but Mostly in the form of waste plastic and bottles of mineral water.

Not only trash that washed up on shore Paloh. In the last 2 months at least found 21 seaturtles (Table 1) were also stranded together piles of garbage and solid black colored chemical material at the seaside 7 which drifted onto the beach Paloh. This incident is considered remarkable so it is important for researchers, especially veterinarian determine the cause of death in the mass stranded turtle nesting beaches Paloh.

CASE REPORT

On 6 February to 7 April 2018 reported 21 seaturtles stranding on beach onnesting Paloh. Turtles are found in conditions ranging from code 1 (Alive) 4.76%, code 3 (Moderate decomposition) 33.33%, code 4 (Advance decomposition) 42.85% and code 5 (Severe decomposition) 19.04%. Mass mortality of sea turtles occurred on 6 April 2018 the number of cases reached 10 animals/day. The methodology for answering the cause of death of the turtles that one way to do a necropsy to see changes after the death pathology (Work, 2000).

Table. 1 Seaturtles stranded case; Paloh feb-apr 2018

No.	Date	Species	CCL	CCW	Code	Sex/a.e
1	6/2/18	Ei	20 cm	17 cm	3	U/j
2	9/2/18	Cm	38 cm	35,5 cm	1 - 2	U/j
3	13/2/18	Cm	82 cm	70 cm	3	M/a
4	17/2/18	Ei	41 cm	43 cm	3	U/j
5	17/2/18	Lo	41 cm	43 cm	5	U/j
6	14/3/18	Lo	61 cm	56 cm	4	F/a
7	20/3/18	Cm	50 cm	44 cm	4	U/j
8	23/3/18	Cm	38 cm	36 cm	4	U/j
9	24/3/18	Lo	36 cm	33 cm	4	U/j
10	24/3/18	Cm	71 cm	64 cm	4	M/a
11	6/4/18	Ei	23 cm	18 cm	3	U/j
12	6/4/18	Cm	92 cm	80 cm	4	M/a
13	6/4/18	Cm	77 cm	72 cm	4	F/a
14	6/4/18	Cm	37 cm	36 cm	3	U/j
15	6/4/18	Cm	41 cm	39 cm	3	U/j
16	6/4/18	Cm	39 cm	37 cm	5	U/j
17	6/4/18	Cm	42 cm	39 cm	4	U/j
18	6/4/18	Cm	42 cm	39 cm	5	U/j
19	6/4/18	Cm	40 cm	38 cm	5	U/j
20	6/4/18	Cm	41 cm	39 cm	3	U/j
21	7/4/18	Cm	39 cm	36 cm	4	U/j

Note: Ei (*Eretmochelys imbricata*), Cm (*Chelonia mydas*), Lo (olive ridley sea turtle), CCL (Curve Carapace Length), CCW (Curve Carapace Width), ae (Age estimation), U (Unidentified), M (Male) F (Female), a (Adult), J (Juvenile)

RESULT AND DISCUSSION

Results from a mass stranding events turtles as many as 21 birds in nesting beaches Paloh, West Kalimantan, The domination by the Green turtle (*Chelonia mydas*) with a percentage of 71.42% followed Hawksbill turtle (*Eretmochelys imbricata*) and Enduring (olive ridley sea turtle) 14.29% respectively. Paloh is the largest green turtle nesting beaches in Indonesia followed olive ridley, Hawksbill, and Leatherback. with an average size of carapace / CCL(*Curve carapace length*) 42.85% and CCW (*Curve Carapace Width*) 39.90 cm age of stranded turtles still classified this signals other than as a nesting beach Paloh, Paloh, as well as the area Feeding young turtles. With a mortality of sea turtles that die young or juvenile amounted to 76.19% and 23.81% Adult turtles.

Based on the observations of the physical exterior, the first live stranded turtles are turtles

dehydration and malnutrition, and impaired balance. Until the end of 9 days, post-treatment turtles dying.

From the findings identified postmortem findings of macroplastic investment 5 x 8 cm hull section of the digestive system. Plastic relatively large size and agglomerate, turtles resulted in blockage of food in the gastrointestinal tract so that the inflammation that is characterized by pathological changes in the form of red spots on the stomach or gastroenteritis hemorrhagic. Blockage of the stomach macroplastic this refers to an indication of malnutrition in seaturtles cause of death (Poppi et al 2012).

While all 16 seaturtles were found with physical changes appear green with some already have swelling or code 3, and most of the stranded turtles already advanced decay or code (4) and into skeletons or code (5) (Poppi et.al 2012).

Results of other necropsy showed that the mortality of sea turtles suspected acute contaminant "tarball" where the feeding habitat in the upper digestive tract is the esophagus to the stomach greenish color changes indicating that the turtle suffered severe poisoning (Carr, 1987). And also still finding fresh food in the form of macroalgae found in the digestive Green turtles and fish pieces were found in the digestive Hawksbill turtle.

In the digestive tract is also found in a solid black material with different consistency from a liquid, viscous to solid mixed with food that gives the effect of poisoning deaths from these materials. The chemical material is mostly seen attached to the wall of the esophagus, stomach, intestine and other findings visible clumping together some food so that this material is adhesive (attached).

The number of green turtles that died up to 71.42% indicating that a contaminant in the feed area of green turtles. According to (Vargo et al 1986) indicate that young green turtle more easily exposed to a tarball or an oil spill from the adult turtles and this is possible because the habitat preferences and location of nesting beaches. As well as by (Schulyer et al 2014) Possible Green turtles ingest marine debris nearly twice the likelihood estimate of 30% in 1985 to nearly 50% in 2012.

To strengthen the case study was conducted rapid assessments in the form of observation beach and water conditions. Whether in the form of search bins around the coast of the carcass findings to aerial surveys using drones. Where observations beaches are found expanse of garbage predominantly plastic bottles with labels production of non-Indonesia (Malaysia, Singapore, China, Vietnam, and Thailand) were among the bottles were found material black attached to both the lid and the body of the bottle, It also found clumps of black mixed with sand found buried

under the sand. Material black or tar balls and clumps of sand it is attached. This finding is similar to the findings found in the digestive tract of sea turtles.

CONCLUSION

Thus, based on the findings of the post-mortem, the main factor in cases of mass death of sea turtle nesting beaches Paloh West Kalimantan in the period February to April 2018, which is dominated by turtle Green 71.42% with an average age of young or juvenile are non-infectious and more leads in the case of non-food material ingested (anthropogenic debris) as macroplastic, oil spills "tarballs" in the area feeding ground.

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