Project Update: February 2022

By now we have completed camera trapping inside all three study sites (protected areas). Camera trapping outside the protected areas is ongoing.

The medium-sized carnivore assemblage (including diversity, abundance, richness) has been evaluated in all three protected areas. Furthermore, occupancy and Maxent modelling procedures were performed to generate species distribution/occupancy maps while generating models to predict the species occurrence as well as to determine the important habitat covariates that determined the presence of medium-sized carnivores were identified. The results include maps that display critical areas for the conservation of these species.

For the very first time in Sri Lanka, and as one of the initial applications of new population density estimate methods like CTDS (Camera Trap Distance Sampling) and REM (Random Encounter Model) were applied, and estimates were generated for the focal species in Sri Lanka.

The foraging ecology of the species was investigated by the fecal sample analysis which revealed the foraging habits and prey species of the medium-sized carnivores. We also evaluated the prey species abundance.

We also investigated the activity patterns of the focal species. Table 01. Sampling effort as a measure of camera trap days

Protected Area	**Number of camera stations for**		**Camera trap effort (trap days)**	
	General analysis	**Population analysis**	**General analysis**	**Population analysis**
MONP	77	89	2712	3402
HPNP	38	38	1845	1845
SNHWA	36	36	2160	2160

To be conducted:

- Analysing the camera trap footages outside the protected areas.
- Several workshops for villagers and especially school children for capacity building in nearby areas of the parks.
- Distribution of posters.

Proposed:

- Mini-documentary series focusing on the conservation and ecology of medium-sized carnivores.
- The camera trap footages will be complemented with drone videos to provide a better understanding of the focal species as well as their habitat to the viewer.

Publications:

(A) Web of Science / SCOPUS Indexed Journal Publications (02)

In Web of Science Core Collection Indexed (SCI Expanded List) Journals (1)

Jayasekara, D., Mahaulpatha, D., and Miththapala, S. (2021). Population density estimation of meso-mammal carnivores using camera traps without the individual recognition in Maduru Oya National Park, Sri Lanka. *Hystrix, the Italian Journal of Mammalogy*, *32*(2): 0. https://doi.org/10.4404/hystrix-00452-2021

In Web of Science Core Collection Indexed (ESCI List)/ SCOPUS Journals (1)

Jayasekara, D. and Mahaulpatha, W.A.D. (2021). Modeling the habitat suitability for sympatric small and medium sized felids and investigating the spatiotemporal niche overlapping in Maduru Oya National Park, Sri Lanka. *Journal of Wildlife and Biodiversity*. *Journal of Wildlife and Biodiversity - doi: 10.22120/jwb.2021.534472.1247*

(B) In Peer-reviewed Journals (2)

Jayasekara, D., P.K.P.M.P. Kumara and Mahaulpatha, W.A.D. (2021). Mapping the vegetation cover and habitat categorization of Maduru Oya and Horton Plains National Parks using Landsat 8 (Oli) imagery to assist the ecological studies. *Wildlanka*, 9(1): 122-135.

Jayasekara E.G.D.P. and Mahaulpatha W.A.D. (2019). Distribution, abundance, activity patterns and habitat characteristics associated with family Herpestidae (Mammalia: Carnivora) in three protected areas representing three main bioclimatic regions of Sri Lanka. *International Journal of Multidisciplinary Studies,* 6(2):79-91.

(C) Abstracts and conference proceedings (08)

Presented in the Rufford in-country conference held in Kandy, Sri Lanka in January 2022.

Jayasekara, E.G.D.P., Mohomad, M.R., Lakshitha, S., Silva, G.KV.V.P.T. and Mahaulpatha, W.A.D. (2019). Assessing the mammalian assemblage of Maduru Oya National Park using camera traps. In: *proceedings of WILDLANKA International Symposium 2019*. Colombo (Sri Lanka).

Jayasekara, E.G.D.P. and Mahaulpatha, W.A.D. (2020). Investigating the Assemblage and Activity Patterns of Mesomammals of Order: Carnivora in Maduru Oya National Park Using Camera Trap. In: *Proceedings of International Forestry and Environment Symposium* (Vol. 25). Colombo (Sri Lanka).

Jayasekara, E.G.D.P. and Mahaulpatha, W.A.D. (2019). Abundance and Distribution of Family Herpestidae in Three Protected Areas Representing Three Bioclimatic Zones in Sri Lanka. In: *Proceedings of the 6th International Conference on Multidisciplinary Approaches (iCMA)* 2019. Colombo (Sri Lanka). pp. 118.

Jayasekara, E.G.D.P. and Mahaulpatha, W.A.D. (2020). Meso-mammal carnivore abundance and activity patterns in Horton Plains National Park. In: *Proceedings of the 7th International Conference on Multidisciplinary Approaches (iCMA)* 2020. Colombo (Sri Lanka).

Jayasekara, E.G.D.P. and Mahaulpatha, W.A.D. (2021). Modeling habitat suitability for small and medium sized felids in Maduru Oya National Park, Sri Lanka. In: *proceedings of International Conference on Wildlife Ecology and Biodiversity Conservation (ICWEB 2021)*, Arak University, Arak, Iran. pp.21.

Jayasekara, E.G.D.P. and Mahaulpatha, W.A.D. (2021). Meso-mammal carnivore abundance and activity patterns in Sinharaja, Sri Lanka. In: *Proceedings of 8th International Conference on Multidisciplinary Approaches (iCMA)*. Colombo (Sri Lanka).

Jayasekara, E.G.D.P., Silva, G.K.V.P.T., Dassanayake, T.D. and Mahaulpatha, W.A.D. (2021). Meso- Mammal Carnivore Coexistence and Habitat Niche Partitioning in Maduru Oya National Park. In: *Proceedings of Wildlanka International Symposium 2021*. Colombo, Sri Lanka.

A few numbers of maps out of many that were generated are provided below.

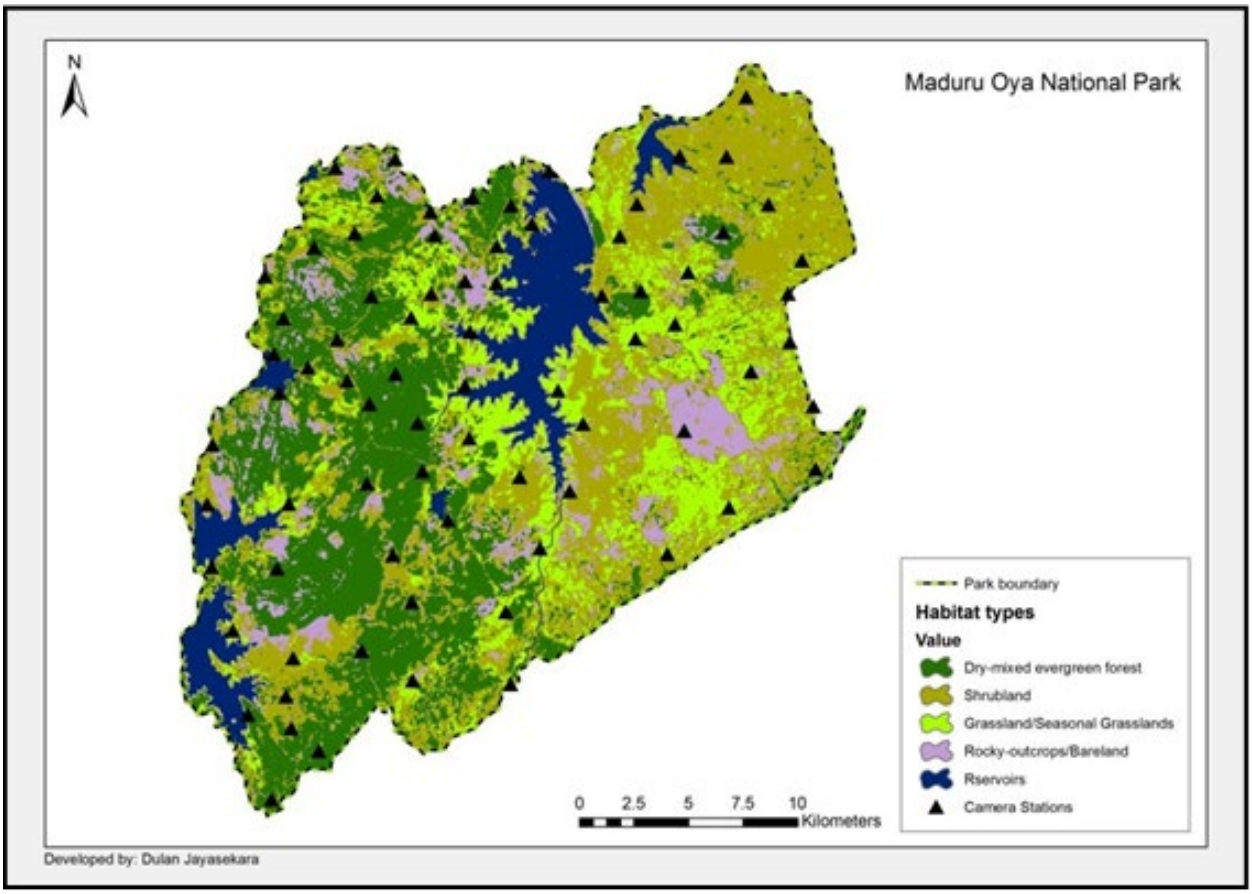

Figure 01. Map of MONP indicating the camera locations and habitat categories

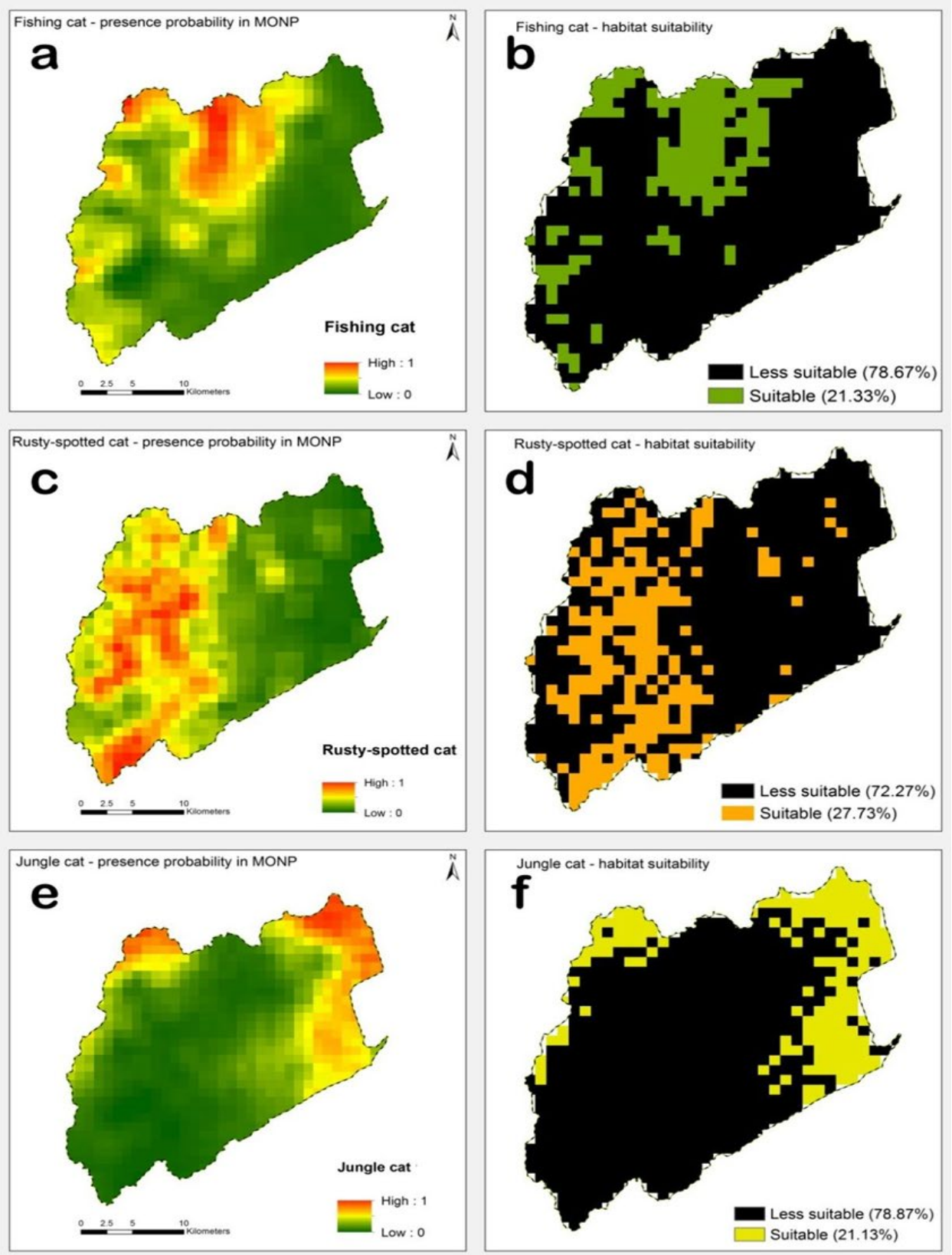

Figure 02. Modeled species distribution and habitat suitability maps for felids in MONP. a), b) fishing cat c), d) rusty-spotted cat e), f) jungle cat

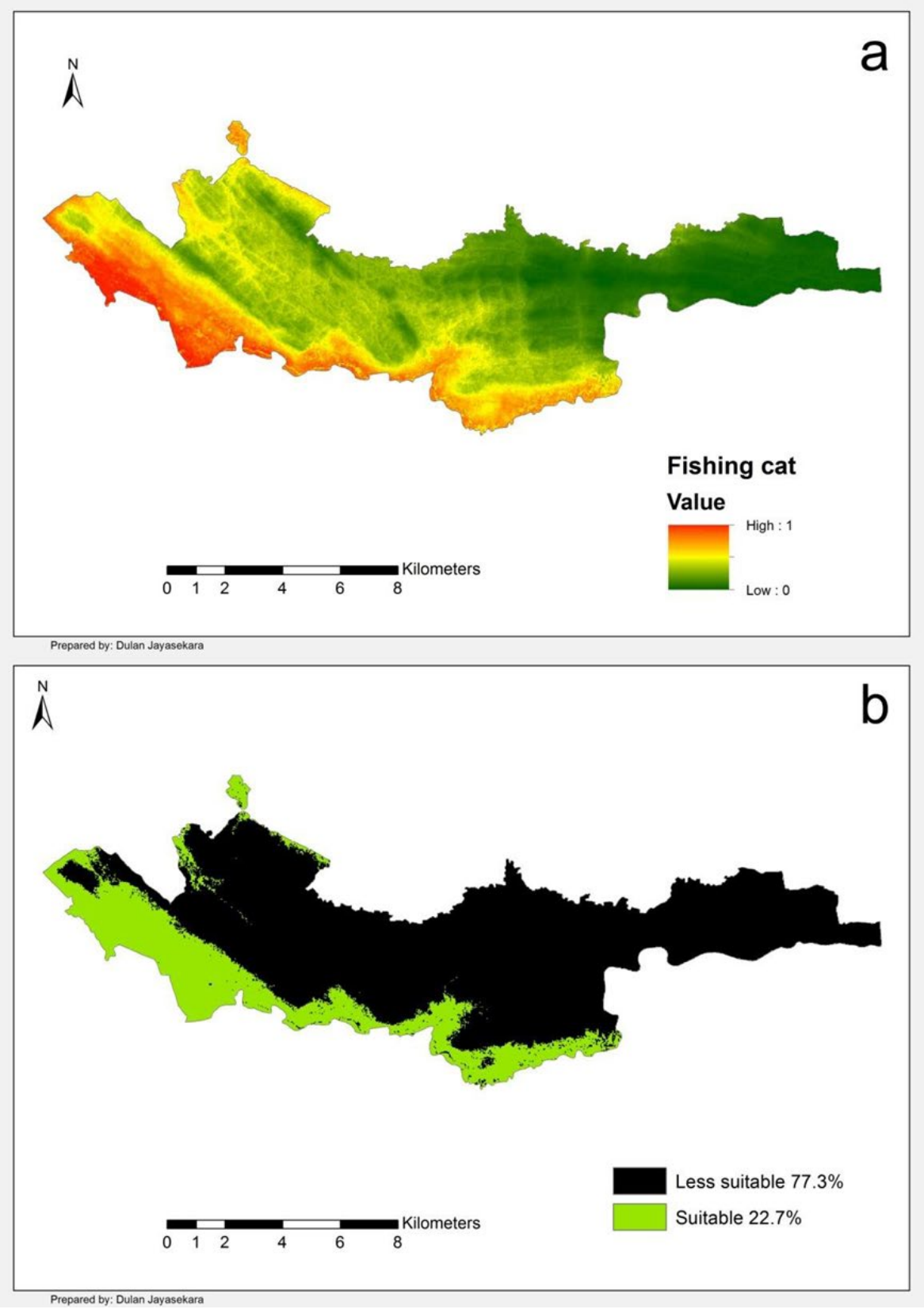

Figure 03. Modeled species distribution and habitat suitability maps for fishing cat in SNHWA

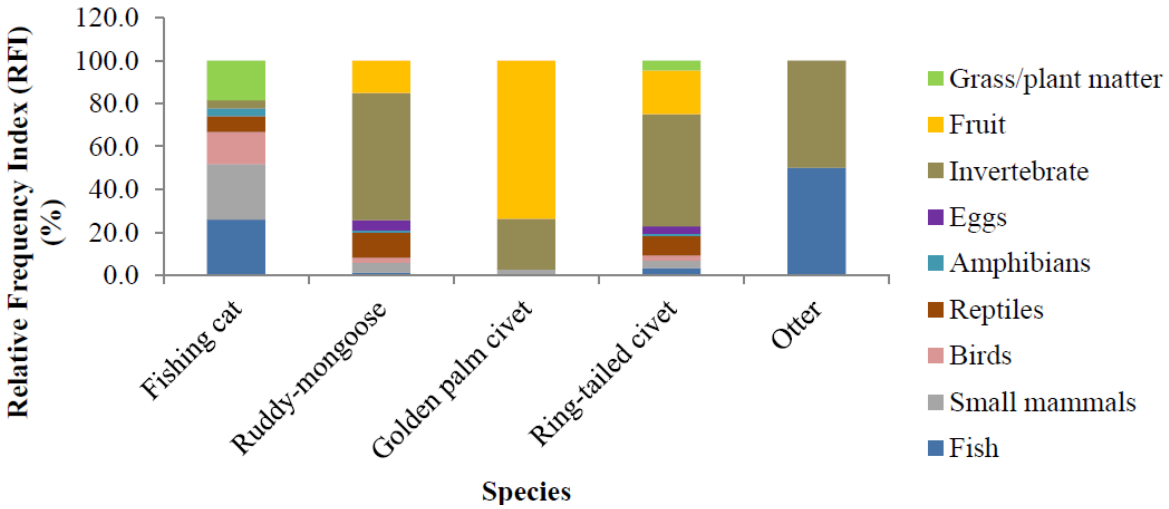

Figure 04. Relative frequency occurrence of food items in fecal samples of most abundant meso- mammal carnivores in MONP

Figure 05. Fur of small mammals found in fishing cat fecal samples under the microscope

Figure 06. Undigested bird feathers (Cormorant) identified in fishing cat feces

Road-side Awareness and Information Board Establishing in the Study Sites


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"මාම කැමිතිත් හොදමයි"
Wel Come to Maduruoya National park


Large and Medium sized mammals of Horton Plains National Park


WILD CATS
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HORTON PLAINS NATIONAL PARK
Directives
DRIVE SLOW
BIRDS CROSSING
CAUTION
WILDLIFE IN THIS AREA


WILD CATS CROSSING
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