



THE EFFECTS OF THE 2015 GÜMÜŞHANE FOREST FIRE ON TWO WILD ANIMALS AND TREATMENT OPTIONS

By

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Abstract

When wild animals encounter a forest fire, the live fear and anxiety feelings and the run away to protect themselves. The behavioral patterns of wild mammals during forest fire are different than each other. While small mammals, in general, seek a place to take shelter, big mammals tend to run away afield the fire area. Our cases consisted of a wild goat and a baby roe deer that were injured while escaping from the forest fire in 2015. For the chevrotain it's first aid made by a farmer living in the area, It was determined traumatic arthritis on its left joint and open wounds on a few locations on its body. On the other hand, it was determined that the roedeer cub was trembling with fear, affected by smoke, breathing heavily and slight. In both of our cases, it was seen post trauma stress disorder formed and rejecting food and water. But it was also observed that after treatment, the general state of roedeer cub cured and its appetite worked up. As for the wild goat, it was also observed that one day after beginning the treatment of arthritis and open wound, it has started to have feed and drink water. In the treatment, Batticon solution bathing onto joint has been administered. For the open wound treatment, a combination of Furacin and Madecassol Pomade was used.

Keywords: Disaster, Forest Fire, Roedeer, Wild Goat, Wounding.

INTRODUCTION

Forest fires; These are fires that occur in forest areas with human influence (deliberate or neglect) or without human influence (lightning strike, etc.) and tend to spread freely and are difficult to control (<https://medikritik.com> ; Lyon et al., 2000).

Wildfires can have significant impacts on wildlife. As a result of forest fires, many animals may lose their lives and many plants may disappear, depending on the size of the fire (Hizal and Akkuzu , 2002). It can take months for animal habitats to rebuild after a forest fire. Forest fires cause the loss of life, injury or disability of animals that cannot escape from the scene, the destruction of their habitats, and as a result, the decrease in nutrients and the difficulties in finding water, shelter and mates (Hizal and Akkuzu , 2002; <https://www.aa.com.tr/>).

When wild animals encounter forest fires, they experience fear and anxiety and run away to avoid destruction (Peggy and Marsh, 2007). The response to wildfires varies depending on the animal species. Different species, such as small mammals, large mammals, birds and reptiles, follow different strategies

to cope with fire (Lyon et al., 2000; Özkan and Öztürk, 2019). While small mammals mostly seek shelter, large mammals tend to flee completely outside the fire area (Özkazanç and Ertuğrul, 2011).

Wild animals escaping from fires can often encounter various dangers, which can harm their health. The extent to which wild animals are affected by forest fires varies depending on factors such as the size and severity of the fire and the mobility of the animal (<https://www.aa.com.tr/>). The impact of wild animals from forest fires manifests itself in the short term as death, injury, and temporary or permanent separation of animals from the area (Özkazanç and Ertuğrul, 2011).

It is also known that wildfire smoke causes adverse acute and chronic health problems in wildlife (such as carbon monoxide poisoning, respiratory distress, neurological disorders, respiratory and cardiovascular diseases, oxidative stress and immune system suppression) and affects animal behavior (Sanderfoot,O.V., et al. 2021).

MATERIAL AND METHOD

It was carried out by obtaining permission numbered E-40392766-280.04-13666978 from the T.R. Ministry of



Agriculture and Forestry, 12th Regional Directorate, Gümüşhane Branch Directorate on 19.03.2024. The keywords of the study summary were selected from "The Medical Subject Headings" (MeSH). Turkish keywords were selected from "Turkish Science Terms (TBT) version 2.0".

The material consisted of a two-year-old male wild goat and a female roe deer calf that were injured while running away. The wild goat, which was first treated by a farmer living in the region, was found to have traumatic arthritis in its left tarsal joint, open wounds on various parts of its body, and a cut wound on its ear. "Figures 1 and 2." It was determined that the young roe deer was shaking with fear, affected by the smoke, and its breathing was rapid and superficial. "Figure 3." The patient was taken to fresh air. Its vital signs were assessed and it was kept in a sitting position. It was observed that its breathing improved spontaneously within 10-15 minutes.

In both cases, it was observed that it had post-traumatic stress disorder and refused food and water. However, it was observed that the young roe deer's general condition improved and its appetite returned after first aid treatment. "Figure 4." It was observed that the general condition of the wild goat improved 1 day after the arthritis and open wound treatment was started, and it started to eat and drink water.



Figure 1 and 2: Traumatic arthritis in the left tarsal joint of the wild goat and laceration wound on the auricle.



Figure 3 and 4: Baby roe deer in poor general condition before treatment.



Figure 5:



Figure 6:



Figure 7:



Figure 8:



Figure 9:



Figure 10:

After clinical examination of the injured wild goat, it was determined that its wounds had been infected for a long time.

First of all, foreign bodies and dead tissue residues in the wound area were cleaned. "Figure 5." After mechanical cleaning with sterile warm water, joint lavage and wound irrigation were performed with antiseptic 0.1% Rivanol solution (Ethacridinlactate). "Figure 6." Then, hydrophilic sterile gauze was thoroughly wetted with rivanol solution. It was squeezed by hand to remove excess water and placed on the wound area, taking care to ensure as much contact with the wound surface as possible. "Figures 7. and 8." Dry gauze was placed on it. It was then wrapped with a bandage. It was covered with a patch "Figure 9." Dressings were changed every 2 days. It was observed that the wound healed on the 21st day "Figure 10."

DISCUSSION AND CONCLUSION

Wildfires can have significant impacts on wildlife. Wild animals escaping from fires can often encounter various dangers, which can harm their health.

There is always a high probability that injured wild animals have been injured for a long time. Therefore, the wound should be treated as dirty and infected (<https://d2hawiim0tjbd8.cloudfront.net/>). In our case, the wild goat's wound had been infected for a long time. It is necessary to apply antiseptic solutions to the infected wound. However, many antiseptic solutions have cytotoxic (cell-damaging) effects. In this respect, the most suitable antiseptic is 0.05% chlorhexidine gluconate. However, antiseptics such as cetrimide, hydrogen peroxide, and triclosan can also be used to clean the wound area. We preferred Ethacridinlactat (rivanol solution) as an antiseptic solution. Ethacridinlactate (Rivanol Powder) is an antibacterial drug that kills or prevents the growth of microbes on the skin. It is used to prevent infection (antisepsis) by killing the microbes that cause infection or preventing their development. It is also known as yellow water among the public. It is also effective in wound treatment, skin infections and disinfection of the skin.

Even-toed (Artiodactyla) animals, which constitute the group of large mammals, can escape from fires because they sense fires more quickly and therefore are not affected by fires much. It was determined that our case was exposed to trauma while escaping from the fire.

It should not be forgotten that forest fires have a natural role for the ecosystem. However, if fires are uncontrolled, negative effects may occur on animals (<https://evrimagaci.org/>).

In conclusion; Forest fires affect the flora, fauna and the entire forest ecosystem in the burned area. In addition, it may take months or even years for animal habitats to re-establish themselves after a forest fire (<https://medikritik.com>).

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