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### Research Story Assignment

A bird nestled into a resting position, high in the branches of a tree with its nest. It was summertime and the wind blew strongly; it was warmer than it should have been. The bird startled at the strong gust of dust that swept below. The dirt settled back onto the ground and onto a nearby manzanita, sticking to the parched leaves. The drought of the winter and spring was intense and left the soil dry, and the grasses already browned (9). Inspired by the warmth of the day, the bird found a small puddle of water to get a drink. It was muddy and spotted with bugs. The bird dipped its beak into the puddle, and tipped its head back, drinking the water. It was tepid and didn't quench its thirst, but it served its purpose.

After a moment, dry twigs and leaves crunched under the tread of a man's shoes. The chipmunks and birds quieted with his approach. The bird returned to the nest and watched as the man made himself comfortable amongst the tan grasses. The bird pecked a beetle from the bark of the tree, its crunch echoed with the snapping twigs below. These beetles were fairly new to the forest, having arrived in the spring, and the bird watched as they spread through the dry, drought parched trees (2). Watching as the man pulled a lighter from his pocket, the bird stayed in its place, and smelled the smoke as it rose from the cigarette in the man's hand. They stayed like that for a while, until the smell grew stronger. Looking down, the bird noticed that the ashes had fallen and flame had caught on a strand of grass. The man noticed the growing smoke and exclaimed as he saw the patch of aflame ground. He ran away, startling other birds and chipmunks from their rest. The bird was fascinated at first; unfamiliar with the growing flames and not realizing immediately the danger they brought. But the flames grew, and the already hot day seemed unbearable to the bird. The bird was hesitant to leave its young children, but the flames left no other choice (3). It joined the other creatures in fleeing the forest as the fire spread. Most trees split and fell, the noise starting the creatures and urging them onward, but a few larger ones were only insignificantly damaged. The flames swirled and created a wind all of its own, making it difficult for flight. The smoke was thick, and added to the confusion.

The bird and many others travelled to safety, where they stayed for quite some time. Settled in another tree's branches, the bird was able to rest and replenish from its journey. In this unburned forest, the creatures built their lives for the time being. Their numbers had dropped and the fiery experience had spooked them. The bird's feathers were singed at the ends from being so close to the start of the fire; it was lucky to be alive and otherwise unharmed. In their new, temporary homes, the animals stayed and situated themselves. They were cautious, and stayed close to their homes, on alert. The bird, hungry from its flight, pecked at some insects. These insects, though, were different from its usual diet. The insects were not the only unfamiliar animals that surprised the bird: there were coyotes here, something the bird had never come into contact with before.

Now, with unfamiliar food, unfamiliar predators, unfamiliar housing, and a certain uneasiness following the fire, the bird was quick and eager to properly rest (10). A hungry coyote, however, had something different in mind. It came rushing towards the birds, provoking a chaotic fluttering as they tried to escape. The coyote, also having fled from the fire, was starving and desperate for food. It got ahold of a bird and killed it as the fortunate birds continued their escape. The creatures now had survived quite a bit, and many were fortunate enough to continue to persevere for a while longer, until they would be able to return to their previous homes.

After the fire had died and the last ash had settled, the bird took a short trip back over the burnt area. It saw that the fire had taken most of the plants with it. Even the soil was different (4). The forest sat like this until the first showers of the fall and winter. The water carved into the loosened and weak dirt, reshaping the landscape (8). A few months passed and the few plants that had survived were joined by incoming greenery, although quite little at first. Insects had returned and the smaller creatures soon followed. The bird and its companions had not been able to save their eggs, and many of the slower organisms had not escaped either.

The lucky creatures were returning and reclaiming their homes, if there was one to be found. The bird had settled into a hole in a tree that had survived, a chipmunk had taken over a fallen log. The larger trees had survived and their cones had released the seeds, allowing small trees to have popped up here and there (7). Luckily, the beetles that had infested the trees did not return (7). Patches of green vegetation peaked through the soil, quickly being depleted by the incoming herbivores, and sunlight flooded the forest floor more than it ever had (7). The rain-

carved land struggled without its minerals, and the landscape looked different than how the bird had left it. There was also new, not just regrowing, plants the bird had never seen before. They were invasive species and began to choke out the regrowing vegetation.

The shifted and rearranged soil was no longer wet from the rain, however, and the lack of roots allowed the wind to influence the dust again (1). A nearby stream was still muddied by the shifting dirt (5). Not much water had come with the winter months, and as spring began, rain was hoped for. Scattered showers in late March, a mildly stormy week in April, but by May it was hot and dry again. The bird's forest was not in danger because it had little to be burned, but the dry air carried the smoke from another forest, and ashes fell when the wind blew strongly. Fires had become more common as the summers grew hotter (9). The bird population was recovering, and they would soon not be so threatened. The bird thrilled when its eggs hatched, strong and hopeful. Still, food for the bird's young family was scarce in the parched forest.

The next winter, lots of water finally came, but because of the loosened soil, a landslide quickly formed (6). It was pushing down a hill, towards the bird's tree. It quickly came to the base of the tree, which was weakened by the fire. The tree was pushed over by the landslide, and the bird quickly fled. It flew and flew until it reached the forest it had sought refuge in during the fire. The bird found a resting place and took shelter from the storm, deciding then that it would not be returning to the other forest.

The cycle of fires continues, with hot summer after hot summer and droughts. The fires spark and spread easily amongst the dry vegetation, and releases gases that only contribute to warmer temperatures. In turn, the rising temperatures make it more easy for fires to start, and the pattern continues. The bird, its companion and children, the other animals, and the plants of the forest will continue to experience this pattern. The bird never does go back to its previous home, but it hears the shifty landscape has stabilized and the vegetation is coming in stronger (8). The bird lives peacefully now in its new home, but every summer, as the wind carries another forest's smoke, it remembers the burning forest and heat of the flames.

Works Cited

(1)

Department of Planning, Industry and Environment . “How Fire Affects Plants and Animals.” *NSW Environment, Energy and Science*, 30 July 2018, [www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/plants-animals-and-fire](http://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/plants-animals-and-fire).

(2)

Iowa State University. “Bark Beetles in Trees and Firewood.” *Bark Beetles in Trees and Firewood | Horticulture and Home Pest News*, 2021, [hortnews.extension.iastate.edu/bark-beetles-trees-and-firewood](http://hortnews.extension.iastate.edu/bark-beetles-trees-and-firewood).

(3)

Keeley, Jon. “How Fire Affects Plants and Animals.” *NSW Environment, Energy and Science*, 30 July 2018, [www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/plants-animals-and-fire](http://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/plants-animals-and-fire).

(4)

Mullen, Luba. “How Trees Survive and Thrive After A Fire.” *National Forest Foundation*, 2017, [www.nationalforests.org/our-forests/your-national-forests-magazine/how-trees-survive-and-thrive-after-a-fire](http://www.nationalforests.org/our-forests/your-national-forests-magazine/how-trees-survive-and-thrive-after-a-fire).

(5)

NIWA. “Water Diversion.” *NIWA*, 5 Oct. 2020, [niwa.co.nz/our-science/freshwater/tools/kaitiaki\\_tools/land-use/water-take-dam-divert2/divert](http://niwa.co.nz/our-science/freshwater/tools/kaitiaki_tools/land-use/water-take-dam-divert2/divert).

(6)

Petley, Dave. “Landslides in Areas Affected by Recent Wildfires in California.” *The Landslide Blog*, 11 Aug. 2020, [blogs.agu.org/landslideblog/2020/08/11/california-wildfire-research-1/](https://blogs.agu.org/landslideblog/2020/08/11/california-wildfire-research-1/).

(7)

Positive Negative Effects. “Positive and Negative Effects of Wildfires - Essay and Speech.” *Positive Negative Effects*, 21 Sept. 2017, [www.positivenegativeeffects.com/wildfires](http://www.positivenegativeeffects.com/wildfires).

(8)

Santi, P., et al. “Wildfire and Landscape Change.” *USGS Publications Warehouse RSS*, 1 Jan. 2013, [pubs.er.usgs.gov/publication/70004528](https://pubs.er.usgs.gov/publication/70004528).

(9)

Union of Concerned Scientists. *The Connection Between Climate Change and Wildfires*, 2020, [www.ucsusa.org/resources/climate-change-and-wildfires](http://www.ucsusa.org/resources/climate-change-and-wildfires).

(10)

University of Rhode Island . “Relocating 'Nuisance' Animals Often Unhealthy for Wildlife.”  
*ScienceDaily*, ScienceDaily, 12 Feb. 2014,  
[www.sciencedaily.com/releases/2014/02/140212164317.htm](http://www.sciencedaily.com/releases/2014/02/140212164317.htm).