GRADE 6 -- NYS Engage Text Modules		Resource (copies)	TeachingBooks Link
6.1	The Lightning Thief / Rick Riordan	SNAP (55)	http://www.teachingbooks.net/qlsx7gi
	Shrouded In Myth / Jessica Fisher Neidl (Calliope 2002)	PDF From Expeditionary Learning	
	D'Aulaire's Book of Greek Myths / Ingri and Edgar Parin D'Aulaire	SNAP (2)	http://www.teachingbooks.net/qlae6o5
	Myths and Legends of Ancient Greece and Rome / E.M. Berens	Gutenberg Project Chapter:"Cronus (Saturn)	
	"Prometheus and Pandora" A Book of Myths / Jean Lang	Gutenberg Project	
	"Moirae or Fates (Parcae)" Myths and Legends of Ancient Greece and Rome / E.M. Berens	Gutenberg Project	
	The Story of Medusa and Athena / Leanne Guenther	Better Lesson	
	Half a Hundred Hero Tales of Ulysses and the Men of Old / Nathaniel Hawthorne	Gutenberg Project: "Theseus Goes to Slay the Minotaur" Gutenberg Project: "Theseus and Ariadne"	
	Key Elements of Mythology	PDF From Expeditionary Learning	
	The Hero's Journey / Zachary Hamby (Excerpt)	PDF From Expeditionary Learning	
	The Golden Key	PDF From Expeditionary Learning	
6.2a	Bud, Not Buddy / Christopher Paul Curtis	SNAP (50 / 1 Audio)	http://www.teachingbooks.net/ql7shhp
	Steve Jobs, "Stanford University Commencement Address" speech	You Tube	
	President Barack Obama, "Back-to-School Speech"	The White House	
	If / Rudyard Kipling	Poetry Foundation	
6.2b	Technically, It's Not My Fault / John Grandits		http://www.teachingbooks.net/qlyqz88
	Blue Lipstick / John Grandits	SNAP (10)	http://www.teachingbooks.net/ql67tsm
	Good Masters! Sweet Ladies! Voices from a medieval Village / Laura Amy Schlitz	SNAP (15)	http://www.teachingbooks.net/qlx4fbk
	Middle Ages / Kenneth S. Cooper (New Book Of Knowledge Grolier Online) Excerpt	PDF From Expeditionary Learning	
	Middle Ages / (Britannica Student Encyclopedia) Excerpt	PDF From Expeditionary Learning	
	The Middle Ages for Kids: What Is a Fief?	Mr. Donn's Social Studies Site	
	The Middle Ages for Kids: The Manorial System & Common People	Mr. Donn's Social Studies Site	
	Serfs in the Middle Ages / Simon Newman	The Finer Times	
	The Middle Ages for Kids: Life of the Nobility: Kings, Lords, Ladies, Knights	Mr. Donn's Social Studies Site	
	Daily Life of a Noble Lord in the Middle Ages	Mr. Donn's Social Studies Site	
6.3a	Dragonwings / Laurence Yep	SNAP (30 / 2 Audio)	http://www.teachingbooks.net/ql8igc3
	The Lost Garden / Laurence Yep		http://www.teachingbooks.net/qlm8aco
	Comprehending the Calamity / Emma M. Burke	PDF From Expeditionary Learning SFMuseum.net	
	Eliza's Pittsinger, "Poem of the Earthquake"	SFGenealogy.com	
	Scene 1: The Great Earthquake and Fires of 1906: A Dramatic Remembrance	PDF From Expeditionary Learning	

GRADE 6 -- NYS Engage Text Modules (con't)		Resource (copies)	TeachingBooks Link
6.3a Con't	Waking Up in a Nightmare	PDF From Expeditionary Learning	
	Photos: View from Laguna & Market Streets of the Great Fire Burning through the Mission District, & 16 Views of the Great Earthquake and Fire (Power Point)	SFMuseum.net	
	One boy's Experience / Lloyd Head	SFMuseum.net	
	Casualties and Damage after the 1906 Earthquake, on USGS.gov	Earthquake.usgs.gov	
	Photos: Area Destroyed by the Fire of April 18-21, 1906	ZPub.com/SF/History	
	Sandy wreaks havoc across Northeast; at least 11 dead / Matt Smith, on CNN	News.blogs.com	
	The Great 1906 San Francisco Earthquake, on USGS.gov	Earthquake.usgs.gov	
	Timeline of the San Francisco Earthquake, April 18-23, 1906 / Gladys Hansen	SFMuseum.net	
	The San Francisco Earthquake, 1906 ; from Eyewitness to History	Eyewitnesstohistory.com	
6.3b	Flush / Carl Hiaasen	SNAP (30)	http://www.teachingbooks.net/qlpaujq
	World without fish / Mark Kurlansky	SNAP (25)	http://www.teachingbooks.net/ql6v4kf
6.4	Frightful's Mountain / Jean Craighead George	SNAP (10)	http://www.teachingbooks.net/qlsjzjh
	Welcome Back	PDF From Expeditionary Learning	
	John Stossel – DDT, video	You Tube	
	The Exterminator / Kirsten Weir	PDF From Expeditionary Learning	
	DDT – Dichloro-diphenyl-trichloroethane , video	Science Government of Canada	
	Rachel Carson: Sounding the Alarm on Pollution / Robert W. Peterson	PDF From Expeditionary Learning	
	Rachel Carson: Environmentalist and Writer / Kathy Wilmore	PDF From Expeditionary Learning	
	Malaria Carrying Mosquito Crash Lands Due to His Insecticide / Adam Allie	Science Heroes	
	How DDT Harmed Hawks and Eagles / Gil Valo	PDF From Expeditionary Learning (Excerpt) Science 360 (Full Article)	
	Biological Energy-Here, Let Me Fix It! /	Utah Education Network	
	A New Home for DDT / Donald Roberts	PDF From Expeditionary Learning (Excerpt) New York Times (Full Article)	
Unit I: Reading Closely for Textual Details: The Wolf You Feed			
Unit II: Making Evidence-Based Claims Unit: Steve Jobs			
Unit III: Researching to Deepen Understanding Unit: Prehistoric Art			
Unit IV: Building Evidence-Based Arguments Unit: Energy Crossroads			

"Shrouded in Myth"

By Jessica Fisher Neidl

A long, long, long time ago, even before Perseus was born, his grandfather, Acrisios, the king of Argos, was given a prophecy that he would someday be killed by his grandson. To protect himself from this fate, the terrified king imprisoned his only daughter, Danae, in an underground dungeon so that she could never marry or have children. Certain that he would never be a grandfather, Acrisios relaxed. But Zeus, the great father of the gods, had other plans.

Zeus had been watching Danae and thought she was stunning—too beautiful to resist. He turned himself into golden rain and poured through the bronze bars in the roof of her elaborate dungeon. As the rain fell upon Danae, its magical powers caused a child to begin growing within her. Nine months later, she gave birth to a son and named him Perseus.

Outraged as well as frightened when he learned of a grandson's birth, Acrisios enclosed mother and son in a chest, which he flung into the sea. After drifting about for a long time, the chest finally washed up on a distant island. A fisherman found it and brought it to his brother, King Polydectes, who took Perseus and his mother into his palace.

When Perseus grew up, Polydectes gave him a series of challenging tasks to complete. Armed with a sword made by the god Hermes, winged sandals, and a shiny bronze shield given to him by the goddess Athena, Perseus slew the dreaded monster Medusa. This hideous creature had writhing snakes for hair, elephant-like tusks for teeth, and blood-red eyes. Whoever looked at her was instantly turned to stone.

As success followed success, Perseus began to think about the stories he had heard about his grandfather, Acrisios. So, after a brief visit to his mother, the young hero set sail for Argos. Before he reached it, however, Acrisios got word that his long-lost grandson was coming and fled the city, for he still feared the prophecy.

While waiting for Acrisios to return, Perseus attended festival games being held in a neighboring town. A skilled athlete, Perseus entered the discus contest. As he prepared to throw it, he lost control and the heavy disk went hurtling into the crowd, striking a man and killing him. Alas, the tragic prophecy had proved true—the dead spectator was Acrisios. Perseus was so troubled about the accident that he chose to leave Argos and build his own city—the legendary Mycenae.

Myths are stories that explain the world and humans' experiences. Mythological stories and characters reflect a culture's past and traditions and, most importantly, tell the story of the values and beliefs that are central to a culture, and to the human race.

The universal appeal of myths is, in part, a result of **elements** that are typical or common across most myths. These repeated elements include symbols, themes, patterns, and characters. These elements help to develop and communicate the theme of a myth. Common themes in myths include the struggle between the forces of good and evil, the quest of a hero, or the origin of some aspect of the natural world.

Parent	Child
Tension between Opposing Forces in the Universe	Myths are often structured around the tensions between opposing forces in the universe, like light versus dark and good versus evil. Often the main characters in myths have responsibility for resolving conflicts between these opposing forces; for example, heroes fighting to overcome evil monsters.
A Struggle for Power	The struggle for power in a myth occurs between two opposing forces. This struggle for power may be between two **supernatural** forces, a supernatural force and a mortal, or two members of a single family. This struggle may be a result of desire for control, vanity, or jealousy. Often this struggle ends with punishment or even death.
Explanation of the Origins of Life and the Natural World	Many myths come from humans' early desire to explain the **origins** of life and the natural world. They try making sense of the wonders of the world they perceived. Myths often attempt to answer the fundamental questions: How did the world come to be? Who are we? What is our purpose on earth? Because ancient people could not rely on science, they told these stories to provide an explanation about where we came from and how things came to be.
Fate and Prophecy	The idea of **fate**, and its overwhelming power, is a central theme in many myths. Neither gods nor humans seem able to escape fate, despite many attempts to do so. Making this theme even more prominent, many myths begin with a prophecy. This **prophecy** then shapes the actions and interactions of the various characters of the myth.
Supernatural or Non-human Characters	Some of the characters in myths are often non-human even though they possess human qualities and emotions. These characters might include gods, goddesses, and supernatural beings. These non-human characters often possess super-human powers and use them to interact with our human world by, for example, controlling the weather. Gods and goddesses may also visit the human world by disguising themselves in different forms.
A Quest or Completion of a Task	Myths often tell stories of human characters who travel between worlds to complete a task; for example, finding someone or something. Often this involves travel between the present world and other worlds like Mount Olympus, the home of the gods, or the Underworld, which is hidden beneath the Earth and is the kingdom of the dead.

A long time ago, there was a hamlet, and in this small village there lived a farm girl named Marney. Marney's parents died when she was very young. She lived on a farm at the bottom of a large mountain with her loving grandparents. Marney's grandparents once had a fertile farm filled with an abundance of vegetables and fruits that her grandfather would take to the market to sell. The farm was rich with trees, birds, and animals of every species that made their homes on the farm. There was plenty for all, and all were happy.

But now things were different. Spring never arrived. The soil had become hard, and the seeds could not be planted. Food was scarce, so the animals that had once inhabited the land left to seek more bountiful homes, plentiful with food and shelter. Marney's grandparents were woeful, worried that they, too, would have to leave their home.

One evening, after a dinner of broth so meager, it ran from the spoon like water, Marney's grandfather, sat beside her at the fire. "Marney, you are a perceptive and sensitive child. As you know, things are not going well for us on the farm this year. Marney, you are the only person that can save the farm from demise."

"Tell me more, Grandpa," Marney said.

"When you were born, Lord Dismalt put an evil spell on our farm. He said that in the year that you turned ten, our beauteous and fertile farm would become barren, the trees would not bear fruit and the land would become so tough that no seeds would be planted. Soon the farm and all of us would perish. He told us that you were the only one who could save us and that you would have to travel up the forbidden mountain and overcome many obstacles in order to reach the golden key that would unlock the curse and redeem our land."

That night, Marney couldn't sleep. She put on her clothes and quietly crept out of the kitchen door into the dark night. She was frightened, but she couldn't let that stop her.

She walked faster and faster until she reached the foot of the mountain, which was surrounded by a forest. The trees were so thick that it was impossible to find a path through the forest. Suddenly, a white goat appeared.

"Hello, goat. I am trying to find my way through this murky forest, dark and dense, so that I can save my family's farm, but I cannot find a path on which to walk. Do you think that you could help me, please?"

"Follow me," said the white goat.

Marney followed the goat as he munched a path for her through the forest. At the end of the forest, he turned to Marney and said, "I can go no farther. Good luck on your journey, my friend." With that, the white goat vanished.

Marney began the steep climb up the incline of the dark mountain. Suddenly, it began to rain. The mountainside was slick, and Marney kept slipping and skidding into the mud. She began to weep, "Please, please can someone help me! I must make this trek to the dark castle to save my family's farm."

There before her appeared a giant white eagle. The bird spread its colossal wings, swooped down from the sky, picked Marney up, and flew her to the top of the mountain.

"Thank you for your help, eagle. Now I must find the golden key," Marney said.

"Good luck on your journey," the eagle replied. "The obstacles that you have faced are nothing like the one that lies ahead of you." With that, the eagle flew away.

"Clang ... clang ... clang, clang," something hard fell from the sky. It hit the side of the building and the roof of the entryway before landing at Marney's feet. "You're going to need this," the eagle shouted from the blackened branch of a tree. Marney picked up the sword.

She walked toward the door of the castle and opened it ever so slowly. A cold breeze enveloped her. She walked down a dark hallway to the right, then turned a gloomy corner. There she saw him, the evil Lord Dismalt slobbering over a roasted vulture leg.

Version 1

On her way to the mountain, Marney ran into a white goat. The goat ate away a path for Marney to follow through the forest. Then, the goat said good-bye and left Marney on the mountainside. Marney cried. Then an eagle flew down and carried Marney to the top of the mountain.

Version 2

" Hello, goat. I am trying to find my way through this murky forest, dark and dense, so that I can save my family's farm, but I cannot find a path on which to walk. Do you think that you could help me, please?"
"Follow me," said the white goat.

Marney followed the goat as he munched a path for her to follow through the forest. At the end of the forest he turned to Marney and said, "I can go no further. Good luck on your journey, my friend." With that, the white goat vanished.

Marney began the steep climb up the incline of the dark mountain. Suddenly, it began to rain. The mountainside was slick, and Marney kept slipping and skidding into the mud. She began to weep, "Please, please can someone help me! I must make this trek to the dark castle to save my family's farm."
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"Thank you for your help, eagle. Now I must find the golden key," Marney said.
"Good luck on your journey," the eagle replied. "The obstacles that you have faced are nothing like the one that lies ahead of you." With that, the eagle flew away.

"Middle Ages" Excerpt 1 (4 Pages)

1. The medieval period, known as the Middle Ages, covers nearly 1,000 years of European history. According to some historians, the **era** began in A.D. 476 when a German chieftain overthrew the last emperor of the Western Roman Empire. It lasted until about 1500, when the Renaissance, a period of tremendous innovation, became firmly established throughout western Europe.

Medieval Life

2. Although Europe was politically divided in the Middle Ages, daily life did not vary greatly from one realm to the next. Medieval society was tightly structured. Many people lived their entire lives in one village or manor. They were born to a certain social position and stayed in that position. Those who wanted something more had few choices. For all but the wealthiest, life was extremely hard.

The Manorial System

3. Medieval **land holdings** ranged from small estates called manors to huge **fiefs** as big as small countries. The lord of a large fief, such as a baron, might give individual manors to his knights, in exchange for their service. Those knights thus became lords of their own small manors. But they still owed **allegiance** to the baron.

4. A lord's word was law on his manor. But knights and barons were often away, fighting battles. Much of the daily management of the manor fell to the lord's wife. She oversaw planting, spinning, weaving, and other activities. She made sure servants did their jobs and ran the household smoothly. Often she also handled the household financial accounts.

5. But despite these responsibilities, women in medieval times had few rights. They were expected to obey their husbands and fathers in all things. Upper-class girls were married off early, as a way for powerful families to form **alliances** and build their wealth.

6. Most of the people on a **feudal** manor were peasants who spent their lives working in the fields. A great many of the peasants were serfs—that is, they were not free. Serfs could not leave their manor to try and find a better place. They belonged to the manor at which they were born and could move or change jobs only if their lord gave permission. The lords did not freely give away their serfs any more than they gave away their land or livestock. When a lord agreed to let one of his serfs marry a serf from another manor, he usually demanded a payment to make up for the loss.

7. Serfs led difficult lives. They had to **till the land** of the lord, as well as the strips in the manor fields in which they grew their own food. They knew little about the world and rarely met anyone from outside their village. They did not travel, nor could they read.

EXPEDITIONARY LEARNING

GRADE 6: MODULE 2B: UNIT 1: LESSON 2

"Middle Ages" Excerpt 1

Glossary:
era – a period of time that has certain qualities or events that happened
land holding – ownership of land
fief – an estate of land owned by someone
allegiance – loyalty
alliance – a union for mutual benefit
feudal – owned by a lord or a baron with peasants and serfs working for him
till the land – work on the land, preparing it for crops, then caring for the crops, then harvesting the crops.

Cooper, Kenneth S. "Middle Ages." The New Book of Knowledge. Grolier Online, 2013. Web. 20 Aug. 2013

"Middle Ages" Excerpt 2

Town Life

1. There were few towns, particularly in northwestern Europe, during the early Middle Ages. The rule of the **feudal lords** discouraged trade, and towns lived by trade. Each lord collected a **toll**, for "protection," from all **merchants** who came into his neighborhood. A merchant paid many such tolls in traveling from one land to another. For example, a merchant taking a boatload of goods down the Loire River from Orléans had to pay 74 different tolls. Needless to say, the many tolls made goods expensive and trade difficult even in times of peace. During the frequent private wars trade became still more risky.

2. As private wars became less frequent, trade became easier. Towns grew in both number and size. Townspeople were better off than the serfs, for they were free. But their position was beneath that of the lords. Thus the townspeople became known as the middle class.

3. Most townspeople were merchants and **artisans**. Some merchants were little more than **peddlers** carrying their packs from village to village. Others brought goods by ship, riverboat, or pack train from distant lands to sell in town markets and fairs.

4. As towns grew larger, some people opened shops stocked with goods bought from the traveling merchants. One shopkeeper might sell drugs and spices brought from distant lands. Another shop might have furs or fine cloth and carpets from the East. Towns also had butchers, bakers, and barbers. Artisans manufactured shoes, hats, cloth, ironware, and other goods in their workshops.

5. The right to do business in a town was a guarded privilege. The merchants and artisans banded together in special organizations for each trade or craft, called guilds. Only members of the guilds could sell goods or practice a trade within the town walls. Guild members all charged the same prices for the same quality work, and they limited the number of people permitted to follow a particular **occupation**. The shoemakers' guild, for example, wanted to make sure that there were never more shoemakers in a particular town than could make a good living there.

The Role of the Church

6. Every town and almost every village in the Middle Ages had a church, where a priest conducted worship services, baptized babies, married young people, and buried the dead in the churchyard. In addition, the priests taught the children at least the most important Christian prayers and beliefs.

7. The church was also served by monks and nuns. Monks were men who lived together in a house called a monastery. They were under the rule of an abbot, and they devoted their lives mainly to prayer and religious service. The nuns were women who followed a similar life in houses usually called convents. Monks and nuns gave all of their property to the monastery or convent. They vowed never to marry and agreed to live under strict rules.

8. Some monks worked in the monastery's fields, fed the poor who came to the monastery gate, or took care of travelers who asked for shelter. Others copied books in the monastery scriptorium, or writing room. Since there were no printing presses, all books had to be copied by hand. A few monks conducted schools where they taught boys to read and write **Latin**. It was necessary to learn Latin because both the Bible and the church services were in that language. Poetry and history were also written in Latin.

Glossary:
feudal lord – the master of an area of land and people who worked there
toll – a charge for using a road, river, or bridge
merchant – a businessman who sells things made by others
artisan – a craftsman who makes something useful, like furniture
peddler – someone who travels around selling things
occupation – a job
Latin – an old language

Cooper, Kenneth S. "Middle Ages." The New Book of Knowledge. Grolier Online, 2013. Web. 20 Aug. 2013

Serfs and Peasants Text 1: "The Peasant's Life" (2 Pages)

About nine-tenths of the people were peasants—farmers or village laborers. A peasant village housed perhaps 10 to 60 families. Each family lived in a simple hut made of wood or wicker daubed with mud and thatched with straw or rushes. Layers of straw or reeds covered the floor; often the peasants' home included their pigs, chickens, and other animals. The bed was a pile of dried leaves or straw, and they used skins of animals for cover. A cooking fire of peat or wood burned day and night in a clearing on the dirt floor. The smoke seeped out through a hole in the roof or the open half of a two-piece door. The only furniture was a plank table on trestles, a few stools, perhaps a chest, and probably a loom for the women to make their own cloth. Every hut had a vegetable patch.

Only a very small number of the peasants were free, independent farmers who paid a fixed rent for their land. The vast majority were serfs, who lived in a condition of dependent servitude. A serf and his descendants were legally bound to work on a specific plot of land and were subject to the will of the lord who owned that land. (Unlike slaves, however, they could not be bought and sold.) Serfs typically farmed the land in order to feed themselves and their families. They also had to work to support their lord. They gave about half their time to work in his fields, to cut timber, haul water, and spin and weave cloth for him and his family, to repair his buildings, and to wait upon his household. In war, the men had to fight at his side. Besides providing labor, serfs had to pay taxes to their lord in money or produce. They also had to give a tithe to the church—every 10th egg, sheaf of wheat, lamb, chicken, and all other animals.

Peasants suffered from famines. Plagues depleted the livestock. Frosts, floods, and droughts destroyed the crops. Bursts of warfare ravaged the countryside as the lords burned each other's fields and harvests.

The peasants' lot was hard, but most historians consider it little worse than that of peasants today. Because of the many holidays, or holy days, in the Middle Ages, peasants actually labored only about 260 days a year. They spent their holidays in church festivals, watching wandering troupes of jongleurs (jugglers, acrobats, storytellers, and musicians), journeying to mystery or miracle plays, or engaging in wrestling, bowling, cockfights, apple bobs, or dancing.

"Middle Ages." *Britannica Student Encyclopedia*. Encyclopaedia Britannica Online Library Edition, 2013. Web. 20 Aug. 2013. http://library.eb.com/kids/comptons/article-9275833

Lords and Ladies Text 1: "Castle Life"

Supported by the labor and taxes of the peasants, the lord and his wife would seem to have had a comfortable life. In many ways they did, even though they lacked many of the comforts of modern society.

The lords owned large self-sufficient estates called manors, which included the land worked by the serfs. The manor houses, where the lords lived, were often protected with defensive works. About the 12th century these palisaded, fortified manorial dwellings began to give way to stone castles. Some of these, with their great outer walls and courtyard buildings, covered perhaps 15 acres and were built for defensive warfare.

At dawn the watchman atop the donjon (main tower) blew a blast on his bugle to awaken the castle. After breakfast the nobles attended mass in the castle chapel. The lord then took up his business. He might first have heard the report of an estate manager. If a discontented or ill-treated serf had fled, doubtless the lord would order retainers to bring him back—for serfs were bound to the lord unless they could evade him for a year and a day. The lord would also hear the petty offenses of peasants and fine the culprits or perhaps sentence them to a day in the pillory (a wooden frame that secured a person's head and arms, causing physical discomfort and exposing the person to public ridicule and abuse). Serious deeds, such as poaching or murder, were legal matters for the local court or royal "circuit" court. (See below "Crime and Punishment.")

The lady of the castle, or chatelaine, had many duties. She inspected the work of her large staff of servants. She saw that her spinners, weavers, and embroiderers furnished clothes for the castle and rich vestments for the clergy. She and her ladies also helped to train the pages, well-born boys who came to live in the castle at the age of seven. For seven years pages were schooled in religion, music, dancing, riding, hunting, and some reading, writing, and arithmetic. At the age of 14 they became squires.

Earthquake Excerpt of "Comprehending the Calamity" by Emma M. Burke

Name:

Date:

Comprehending the Calamity

This splendid eyewitness account was written by Emma M. Burke, wife of San Francisco attorney Bart Burke, who lived on Waller Street near Golden Gate Park at the time of the earthquake. This article appeared in the June 2, 1906, edition of Overlook Magazine.

No one can comprehend the calamity to San Francisco in its entirety. The individual experience can probably give the general public the clearest idea. I was one of the fortunate ones, for neither personal injury nor death visited my household; but what I saw and felt I will try to give to you.

It was 5:13 a.m., and my husband had arisen and lit the gas stove, and put on the water to heat. He had closed our bedroom door that I might enjoy one more nap. We were in a fourth-story apartment flat, said to be built with unusual care.

Twelve flats, so constructed, occupied a corner one block from Golden Gate Park. All our rooms, six in number, opened into a square reception hall, from which the stairs descended.

The shock came, and hurled my bed against an opposite wall. I sprang up, and, holding firmly to the foot-board managed to keep on my feet to the door. The shock was constantly growing heavier; rumbles, crackling noises, and falling objects already commenced the din.

The door refused to open. The earthquake had wedged it in the door-frame. My husband was pushing on the opposite side and I pulled with all my strength, when a twist of the building released it, and the door sprang open.

We braced ourselves in the doorway, clinging to the casing. Our son appeared across the reception room, and my husband motioned to him to stand in his door also, for fear of the chimney.

It grew constantly worse, the noise deafening; the crash of dishes, falling pictures, the rattle of the flat tin roof, bookcases being overturned, the piano hurled across the parlor, the groaning and straining of the building itself, broken glass and falling plaster, made such a roar that no one noise could be distinguished.

Earthquake Excerpt of "Comprehending the Calamity" by Emma M. Burke

We never knew when the chimney came tearing through; we never knew when a great marine picture weighing one hundred and twenty-five pounds crashed down, not eight feet away from us; we were frequently shaken loose from our hold on the door, and only kept our feet by mutual help and our utmost efforts, the floor moved like short, choppy waves of the sea, crisscrossed by a tide as mighty as themselves. The ceiling responded to all the angles of the floor. I never expected to come out alive. I looked across the reception-room at the white face of our son, and thought to see the floors give way with him momentarily. How a building could stand such motion and keep its frame intact is still a mystery to me.

Stand in front of your clock and count off forty-eight seconds, and imagine this scene to have continued for that length of time, and you can get some idea of what one could suffer during that period.

Emma M. Burke 1906 Earthquake Eyewitness Account." Museum of the City of San Francisco. N.p., n.d. <http://www.sfmuseum.net/1906/ew13.ht

Scene 1: The Great Earthquake and Fires of 1906: A Dramatic Remembrance

Parts:
Narrator
Ruth Allen (26-year-old mom)
James Allen (30-year-old dad)
Jack Allen (6-year-old son)

Scene 1
Narrator: Ruth, James, and Jack are all in one bed sleeping. The sun has come up, but it is still early in the morning. The room jolts suddenly. Ruth sits up in bed.

Ruth (*shouting urgently and shaking James and Jack*): James! Jack! Wake up! Wake up!

(*James and Jack wake up suddenly and sit up in bed*)

James: It's an earthquake and I think it's a bad one. Come on, get up quickly, both of you. We need to get to the doorway. The doorframe will protect us.

Narrator: All throw off the covers, get out of bed, and run for the doorway. The shaking is getting worse. Pictures are falling from the walls and the bed is moving across the room. Dad throws the door open and they all huddle in the doorway holding on desperately to the frame.

Jack (*looking up at Ruth*): Mom, I'm scared. I don't want to die.

Ruth (*grabs hold of Jack's free hand tightly*): It will be over soon, Jack. I promise. Keep a hold of my hand. Don't let it go.

James: Keep hold of the doorframe, both of you. Don't let it go.

Narrator: They all turn their heads as they hear a bloodcurdling scream and then silence from the room across the hallway. Ruth squeezes her eyes shut as if to block out the sound and Jack whimpers. The shaking intensifies and the building groans and creaks noisily around them. The floor suddenly tilts underneath their feet. Ruth screams and they all struggle to hold on.

Ruth (*frantically trying to hold on to the doorframe and Jack's hand*): James, I'm losing my grip. I don't know how much longer I can hold on.

Jack (*screaming*): Mom!

James: Ruth, we can do this. It won't be much longer now.

Narrator: The ceiling in the bedroom in which they were sleeping falls through and a cloud of dust surrounds the family, making it difficult for them to see anything. Jack screams. As quickly as it started, the shaking stops.

She felt dizzy and confused. She looked around her, but everything was dark and she couldn't figure out where she was or why she was there. She heard groaning just a few feet away, but couldn't make out whom the groans belonged to or why the person was groaning. The air seemed thick and hard to breath, and a deep inhalation scratched the back of her throat raw and made her cough. She was starting to get frightened, but she tried to fight it off. Perhaps if she just laid her head back down and went to sleep, she might ...

"Ouch!" As she laid her head back, she rested it against something sharp that dug into her scalp. That woke her up a little more. Images started to enter her mind, images that she wanted to forget. A recollection of waking up suddenly to the whole room shaking around her; pictures throwing themselves off the walls and the furniture crashing and banging as it tumbled over. Her favorite doll thrown from the shelf and crushed by the crib that was launched across the room like an arrow from a bow. She remembered looking at her sister sitting bolt upright in the next bed, her face frozen in shock, but neither of them could speak because their throats were closed shut in fear. Then there was a shrill creaking sound, so sharp and penetrating that it was almost like a scream as the walls and ceiling fell in on them. That was the last thing she remembered before waking up here in this nightmare.

Welcome Back

Full speed ahead! The peregrine falcon perched high on a cliff ledge spots a starling below. His keen vision allows him to focus on the target. Head pointed down, wings and feet tucked in, he begins his dive.

A peregrine's dive or "stoop" can reach speeds of up to 200 miles an hour. No speeding ticket for this guy, though. Instead, success! He strikes the starling, circles back and grabs it with his sharp talons. Mission accomplished.

Just as he's catching his next meal, a fellow falcon streaks by at a level cruising speed of 55 miles per hour. Sunlight reflects off of his blue-gray back, a black moustache lines the sides of his face beneath a black head and white cheeks. Long pointed wings permit him to easily shift positions while in flight.

The peregrine falcon is a magnificent bird and we are fortunate to be able to enjoy these agile flyers today. Once one of the most widespread birds of prey, the peregrine almost completely disappeared from our skies.

In the 1950s and 1960s, farmers used DDT, *dichloro-diphenyltrichloroethane*, to kill insects that damaged their crops. Birds that the peregrine falcon fed on were eating the insects with DDT in them, which built up in the falcon's body, causing the female falcons to lay thin-shelled eggs. When they sat on their eggs to keep them warm, the eggs broke before the chicks could hatch.

Hoping to help the falcons, scientists began raising chicks in captivity. Eggs were hatched in laboratories under the scientists' watchful eyes. Hand puppets that looked like the mother falcons were used to feed the babies. That way, they remained wild because they thought "mom" was feeding them. In 1974, the first peregrine falcons raised in captivity were released into the wild.

Raising falcons in captivity, as well as other actions taken during the 1970s, helped to increase their numbers. The use of DDT was banned in 1972, and the following year the peregrine falcon became protected under the Endangered Species Act. Due to all of these efforts, these remarkable birds have made a comeback from 235 known nesting pairs in 1975, to an estimated 2,000 pairs in the United States and Canada today.

Thanks to the actions of scientists and others who cared enough to save the peregrine falcon, we are able to, once again, enjoy these aerial acrobats.

—Susan Nagle-Schwartz is a freelance writer interested in wildlife conservation, Pennsylvania.

Track The Falcon

The Falcon Research Group is an organization committed to saving birds of prey. One of their projects involved placing GPS transmitters on several tundra peregrine falcons to track their migration. Traveling between Chile and the Arctic, they cover between 6,000 and 8,000 miles on their journey. You can follow the travels of Sparrow King, La Serena, and all of their friends by visiting the web site: www.frg.org. Click on the "Field Research" tab, and then, "Southern Cross Peregrine Project" to find out where they are in the world.

Cherry Blossom Spirit

Pink buds rain upon
People waking underneath
A petal shower

Air smelling sweet
Light and graceful on you're feet
Dance, Sakura-Chan

Soft and round
Swirling, twirling to the ground
Looks, feels, smells like love

With the sunrise, she
Is blown away by the wind
In it's smooth branches

Her blossoms still live.

—Cassie Lowell, 14, Maryland.

By Susan Nagle-Schwartz, Reprinted from Skipping Stones, March-April 2010. Used by permission

"The Exterminator"

Can an old pesticide that is banned in most countries defeat one of the world's worst disease?

By Kirsten Weir

Few Americans ever give much thought to malaria. That wasn't always so. Malaria once infected—and killed—many people in the United States. During the Civil War, more than a million soldiers fell ill with the disease.

By the middle of the 20th century, malaria had been wiped out in the United States, Canada and northern Europe. But it continues to be a serious health problem in many tropical countries. Malaria kills an estimated 2 million people every year, most of them children under age 5. Despite an international effort to control the disease, malaria rates in Africa have risen over the past few years. "It's going in the wrong direction," said Roger Bate, the director of Africa Fighting Malaria, a nonprofit research and advocacy group.

Bate is one of several health officials now pushing for broader use of DDT (*dichlorodiphenyltrichloroethane*), a chemical that played an important role in kicking malaria out of the United States. They argue that DDT is the best option available for saving lives. But DDT is a touchy subject because it has been banned in the United States and many other countries for decades.

BAD AIR

People once believed that breathing nasty swamp air caused malaria. In fact, the word *malaria* is Italian for "bad air."

Toward the end of the 19th century, scientists identified the true cause: a single-celled parasite they named *Plasmodium*. About the same time, scientists also discovered that mosquitoes act as *vectors* for the parasite, passing it one when they bite people. A vector is an organism that spreads disease-causing agents from host to host without harm to itself. (See "A Parasite's Circle of Life," page 6).

The malaria parasites need warm temperatures to develop inside mosquitoes, and the balmy southeastern United States was once hit hard by the disease. Malaria existed nearly everywhere mosquitoes did. During steamy summers, the disease reached as far north as Montreal. Changes in living habits—a shift toward city living, better sanitation, and the use of window screens—were largely responsible for the eradication of malaria, but DDT also played a part. DDT is an

insecticide, a chemical that kills insects. In the 1930s and 1940s, when the U.S. government made a serious effort to wipe out malaria, DDT was one of its preferred weapons. It was sprayed on swamps and other wet areas where mosquitoes bred. Small amounts were also applied to some household walls in rural communities.

By 1951, malaria was gone from the United States, but DDT was still used for other purposes. Huge quantities of it were sprayed by airplane on farmland to kill the insect pests that feasted on cotton and other crops. At first, no one worried about the possible effects of the chemical on the environments. Then in, 1962, an ecologist named Rachel Carson captured the country's attention with her book, *Silent Spring,* which detailed the dangers of DDT.

Carson described the damage done by DTT, which persisted in nature for years without breaking down. T he chemical first built up in the tissues of fish. It then accumulated inside eagles and other birds of prey that ate the fish. It caused the birds' eggshells to become thin and brittle. The eggs cracked under their own weight, sending bird populations into a nosedive. The U.S. government responded by banning DDT in 1972.

DOUBLE WHAMMY

Many other countries followed suit, including a number of nations that relied on DDT for malaria control. A handful of malaria-ridden countries have continued to use DDT to control the disease. But even in those countries, DDT is no longer dumped in mass quantities onto the land. It is applied only to the inside walls of houses. Because malaria mosquitoes bite after dusk, protecting people inside their homes

SERIOUSLY SICK

Malaria begins with flulike symptoms: fever, sweating, chills, headaches, muscle aches, and nausea. The symptoms come and go every 48-72 hours. Without treatment, the disease can get much worse. The parasites infect and destroy red blood cells, which can lead to severe *anemia,* a condition in which the concentration of red blood cells is too low to supply enough oxygen to the body's tissues. Infected blood cells can also clump together and stick to the body's blood vessels, blocking blood flow to the brain. The result is often blindness, brain damage, or death.

Drugs are available to treat malaria, though many are expensive. To be most effective, the drugs must be taken before the disease becomes severe. Poor families in places such as rural Africa often cannot afford the drugs, or they put off going for treatment until it's too late.

Such *prophylactic,* or preventive, medications are also available. When given to uninfected people, they attack the parasite if it ever gets into the body. But the prophylactic drugs are expensive and hard on the body. Travelers can safely taken time for a few weeks or months, but the pills are too toxic for people living in malaria-affected countries to tolerate for long periods of time.

can be very effective. DDT packs a double whammy: It repels most mosquitoes and kills those that get too close. It is by far the cheapest insecticide available and lasts twice as long as the alternatives.

South Africa was one nation that continued to use DDT after the United States banned the chemical. By 1996, South Africa had fewer than 10,000 annual malaria deaths. That year, the country switched from DDT to other insecticides. The new insecticides were also widely used in farming, and the overexposed mosquitoes quickly became resistant to the chemicals. By 2000, the number of deaths from malaria had risen to more than 60,000. At that point, South Africa turned back to DDT. Within three years, malaria infections dropped nearly to 1996 levels. In other countries where DDT has been used, from Ecuador to Sri Lanka, it has had similar positive effects.

Today, only about 20 countries use DDT for malaria control, according to Roger Bate. Many more could benefit, he says.

PUBLIC FEAR

Why don't' more countries use the powerful insecticide? "DDT probably has more opponents than any other insecticide because of its historic use," explained Bate. "But it's mistaking the point!

All of the problems associated with it in the past are down to the mess that was made of it in farming."

Some wealthy countries worry about the double standard of supporting the use of a chemical abroad that they've banned at home. The memory of *Silent Spring* and dying bald eagles also lingers. Most of the money that tropical countries use to fight malaria comes from international donors. Many of those donors are reluctant to fund the use of a chemical that scares so many people.

"Why [DDT] can't be dealt with rationally, as you'd deal with any other insecticide, I don't know," Janet Hemingway, the director of the Liverpool School of Tropical medicine, told *The New York Times*. "People get upset about DDT and merrily go and recommend an insecticide that is much more toxic."

Bate and many of his colleagues argue that the public's fear of DDT is unfounded. Billions of Americans were exposed to high amounts of DDT when it was used in agriculture, Bate said, without any harm to human health. And many scientists agree that the small amounts needed for malaria protection would likely have no significant effect on the environment.

Meanwhile, malaria is not going away. Some scientists estimate that malaria has killed half of all the people who have ever lived. Today, the disease claims two lives every minute. The most severely affected countries are in Africa, where the disease takes the life of one in every 20 children.

Some scientists worry that the situation could become

KILLER GENES

Scientists have tried for decades to develop a vaccine to prevent malaria, without success. Dozens of different species of mosquito carry the parasite inside them, infecting people with their blood-sucking bites. To complicate things further, four different *Plasmodium* parasites cause malaria in humans. Because so many different species of mosquito and parasite are involved, and because *Plasmodium*'s life cycle is so complex, a vaccine has so far been impossible to produce.

Still, researchers haven't given up. Many are looking for solutions in modern biotechnology. In 2002, scientists sequenced the *genomes* of the most common malaria parasite, *Plasmodium falciparum*, and one of its most common carriers, the mosquito *Anopheles gambiae*. A genome is the total genetic information in an organism.

Theoretically, scientists could use that genetic knowledge to tinker with the genome of the mosquito to make its immune system kill the parasite. Or researchers could tweak the genome of the parasite itself to render it less infectious of less deadly. Such tasks would take years to accomplish, if they can be achieved at all. But the genomes offer one more target in the fight against malaria.

even worse. As global warming heats up the planet, mosquitoes are spreading into areas where they once could not survive. Hotter temperatures also allow the *Plasmodium* parasite to develop faster inside the mosquito, infecting more people in a short amount of time.

Most scientists now think that eradicating malaria is impossible, given the complicated life cycle of the parasite. But chipping away at the disease is possible, and DDT has proved itself to be a valuable tool.

"The big picture is bad, but there are examples out there of what works," Bate said. "We need every tool in the arsenal!"

GREEN GIANTS (HEROES OF THE ENVIRONMENT)

RACHEL CARSON: SOUNDING THE ALARM ON POLLUTION

Eighth in a Series

Rachel Carson was a small, soft-spoken scientist.

She also was one of the towering Green Giants of the 20th century.

Her Book Changed Our World

Her 1962 book, "Silent Spring," was probably the most influential work on conservation ever written. It made Americans think hard about pollution of the environment. It led to strict controls on synthetic pesticides.

Rachel Carson was a marine biologist. She already had published three excellent books about the sea and its creatures. All were best sellers. They combined sound science with good writing.

Deadly Chemicals

The purpose of "Silent Spring" was to raise public alarm about chemical pesticides, especially one called DDT, which was introduced in 1939.

In the 1940's, the chemical industry developed many related pesticides. The pesticides saved farmers and gardeners time and money because they made it easier to control insects and weeds. By the mid-1950's, half a billion pounds of pesticides were being spread over fields and gardens each year.

The trouble was that some chemicals hurt not only insects and weeds but also birds, mammals and fish. Some scientists said the chemicals hurt people too. Others had written about the danger before Rachel Carson wrote "Silent Spring," but few people paid attention.

Thousands of Dead Fish

By 1960, though, the evidence was clear. Fish had died by the tens of thousands when orchards near lakes were sprayed with pesticides. Thousands of birds had been doomed by aerial spraying of woodlands.

Rachel Carson's "Silent Spring" fairly shouted: "Whoa! Look what we're doing!" She did *not* oppose the use of all pesticides. But she wrote, "We have allowed these chemicals to be used with little or no advance investigation of their effect on soil, water, wildlife, and man himself."

Parts of the book began appearing in *The New Yorker* magazine in 1962. Rachel's message made for a noisy summer. It was attacked by the chemical industry, food companies, and some government agencies. They said the book was scientifically unsound. They dismissed her as a "nature nut," "food faddist," and "just a bird watcher."

Mild-Mannered but Tough

Rachel was quiet and mild-mannered, but she was also tough-minded. She stood up to all the criticism and enjoyed the praise that came from many scientists who knew about pesticides.

In following years, DDT and 11 other chemical pesticides Rachel had warned about were banned or tightly restricted. By the time of her death in 1964, her name was a household word.

A Writer at Age 10

Rachel Carson had come a long way from her childhood in a small town near Pittsburgh, Pa.

She had learned to love nature as a young girl. Her mother could not bear to kill a living thing, and so Rachel had to catch insects that got into the house and release them outside.

Rachel's first published story appeared in *St. Nicholas*, a children's magazine, when she was only 10 years old. She decided to become a writer, but in college she had to take a science course. She chose biology—and liked it. That was the start of a career that joined science with literature.

By the time she had published her third best seller on the sea, Rachel Carson was famous. People were ready to listen to her scary message in "Silent Spring." It changed how they thought about the earth—and also how they treated it.★

—Robert W. Peterson

Carson at a Glance

BORN:
May 27, 1907, at Springdale, Pa.; died April 14, 1964.

LEGACY FOR THE EARTH:
She put a spotlight on environmental pollution.

FOR FURTHER READING:
"Sea and Earth: The Life of Rachel Carson," by Philip Sterling; "Rachel Carson," by Carol B. Gartner.

❦ ❦ ❦

"Future historians may well be amazed by our distorted sense of proportion. How could intelligent beings seek to control a few unwanted species by a method that contaminated the entire environment and brought the threat of disease and death even to their own kind? Yet this is what we have done." —*Rachel Carson's warning in "Silent Spring."*

❦ ❦ ❦

"Rachel Carson: Sounding the Alarm on Pollution" by Robert W. Peterson, published in Boys' Life Magazine, August 1994, pages 38-39.

Rachel Carson: Sounding the Alarm on Pollution

Joe Ciardiello www.joeciardiello.com

"Man's way is not always best"
by Kathy Wilmore

(for research folder)

When you hear the world "revolutionary," what image comes to mind? An angry, wild-eyed man toting a machine gun, perhaps? Or do you look back in history to see someone like George Washington or Paul Revere? How about the environmentalist and writer Rachel Carson? She may not look the part, but Rachel Carson was a true revolutionary. Her work as a writer and scientist stirred people up and helped launch a new age of environmental awareness in the United States.

In 1962, Carson published *Silent Spring*, her fourth book on nature. It had an almost fairy-tale beginning: "There once was a town in the heart of America where all life seemed to live in harmony with its surroundings."

However, something in that town went horribly wrong. Sickness and death appeared everywhere: among flowers and trees, cattle and sheep, even humans. "There was a strange stillness," wrote Carson. "The birds, for example—where had they gone?... The few birds seen anywhere ... trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of ... (many) bird voices there was now no sound: only silence lay over the fields and woods and marsh."

Carson went on to explain the cause of that eerie silence: "Pesticides" (insect-killing chemicals) had gotten into the water, air, and soil and were killing or sickening all sorts of creatures—including humans. "Can anyone believe," she wrote, "it is possible to lay down such a barrage of poisons on the surface of the earth without making it unfit for all life? They should not called "insecticides" [insect killers] but biocides [life killers]."

If we are not more careful with the chemicals we use, warned Carson, the nightmarish silence described in *Silent Spring* could come true.

Anything but Silence

The reaction to Carson's book was anything but silence. It caused such an uproar that a *New York Times* headline declared: SILENT SPRING IS NOW NOISY SUMMER.
Chemical manufacturers were furious with Carson. They ran ads telling Americans to ignore *Silent Spring*. They questioned Carson's abilities as a scientist, calling her a hysterical fanatic. Pesticides, they said are perfectly safe—don't worry about a thing.

But Americans did worry. The White House and the Congress were flooded with letters from anxious citizens demanding that something be done. President John F. Kennedy called for a special committee of scientists to investigate Carson's claims. Congress also formed an investigation committee.

The soft-spoken Carson would rather have spent her days on the rocky coast of Maine, where she did much of her research as a marine biologist (scientist who studies sea life). But the storm of debate surrounding her book and its critics pulled her into the limelight.

Coming to Terms with Nature

In defending her research, Carson told Americans to think for themselves. Who had the most to win or lose if she turned out to be correct? "As you listen to the present controversy about pesticides," said Carson, "I recommend that you ask yourself: Who speaks? And why?"
The main thing to consider, she said, is our future. What kind of world do we want to leave our children? "I deeply believe," Carson told Congress, "that we in this generation must come to terms with nature."

Carson's ideas may not seem revolutionary today. But back in 1962, few people were familiar with such terms as pollution and ecology and environmental awareness. U.S. industries were constantly coming out with useful and exciting new products, but few people stopped to think if there could be negative side effects to any of them. Humans did what was convenient for them. Nature to most people was something that just took care of itself.

A Message to Remember

President Kennedy's commission supported Carson's warnings. So did other government studies. Armed with such new data and the public outcry, Congress began passing laws to ban or control the use of potentially dangerous pesticides. It also called for more careful testing of chemicals' side effects. In 1970, Congress established the Environmental Protection Agency (EPA) to reduce and control pollution of water, air, and soil. Rachel Carson did not live to see all of this happen. She died of cancer in 1964.

What about us? Can we avoid the "silent spring" that Carson predicted? In the 31 years since *Silent Spring* first appeared, people have grown far more aware of our impact on the environment. But we still use many potentially deadly chemicals.

A 1993 *New York Times* article says that "68 pesticide ingredients [not in use] have been determined to cause cancer. One out of every 10 community drinking-water wells contains pesticides.... Farmers exposed to "herbicides" [weed killers] have a six times greater risk than others of contracting certain cancers. Children in homes using pesticides are seven time as likely to develop childhood leukemia [a form of cancer]."

"There remains, in this space-age universe," wrote Rachel Carson, "the possibility that man's way is not always best." We would do well to remember her warning.

Wilmore, Kathy. "Rachel Carson: Environmentalist and Writer." *Scholastic Junior Magazine*. 2013. <http://www.scholastic.com/browse/article.jsp?id=4964>.

How DDT Harmed Hawks and Eagles (excerpt)

Pesticide DDT is a chemical compound that was a major factor in reducing the eagle and hawk populations around the world. Raptors were also hurt by other problems such as hunting and deforestation. The 1972 ban of DDT certainly contributed to the birds of prey's revival in the United States. It is important to understand how people have tracked and identified their progress. The modern day explosion of nesting pairs makes us realize the disastrous effects of synthetic pesticides.

The United States used DDT during the mid-1900s. During and after World War II (1939–1945), DDT was widely used as a synthetic pesticide to prevent insects from killing agricultural crops. It was popular with farmers, foresters, and domestic gardeners. The compound reached a global peak of 386 million pounds (175 million kilograms) in 1970. In 1959, the United States sprayed 79 million pounds (36 million kilograms) of DDT chemical compound.

The dangerous consequences of spraying synthetic pesticides were not realized until 1962. An American biologist, Rachel Carson, published *Silent Spring*. The public learned DDT caused cancer in people. The synthetic pesticide harmed eagles and other birds of prey populations. Bald eagles were threatened with extinction in the lower 48 states. Finally, in June 1972, the U.S. Environmental Protection Agency (EPA) banned DDT use in the United States. Recently as May 23, 2001, DDT pesticide use was limited worldwide at the Stockholm Convention.

Birds of prey species badly affected by synthetic pesticide use included: peregrine falcons, sharp-shinned hawks, Cooper's hawks, Eurasian sparrow hawks, osprey, bald eagles, white-tailed eagles, brown pelicans, and herons.

The eagle needs rich soil and its fertility. Grass cannot grow on deteriorated soil. A diminishing rabbit population hurts eagle populations. DDT contaminated many soils and plants. Mice stored the poisonous particles in their fatty tissues. Hawks consumed numerous mice, and their numbers declined because of DDT poisoning.

Bald eagle populations decreased as low as 500 nesting pairs in the lower 48 states. Some bald eagles were poisoned because their fish ingested synthetic pesticides. The 1972 DDT ban and the 1973 Endangered Species Act, helped reverse a dismal trend. The lower 48 states noticed an increase of over 5,000 nesting pairs. 70,000 bald eagles inhabit North America.

How DDT Harmed Hawks and Eagles (excerpt)

In 2007, the American bald eagle was taken off the endangered species list in Wisconsin. In 1973, the bald eagle inhabited 108 territories in the state. Those territories rose to 1,150 breeding pairs in 2010. Half of the eagle population nest on privately owned land. It makes it important for Wisconsin citizens to understand the importance of protecting eagles.

Author: Gil Valo (Interested Citizen)
Date: July 26, 2007
Source: http://www.helium.com/items/2203587-how-ddt-harmed-hawks-and-eagles
Publisher: www.helium.com

Valo, Gil. "How DDT harmed hawks and eagles." Helium. 26 July 2011. Web. http://www.helium.com/items/2203587-how-ddt-harmed-hawks-and-eagles.

A New Home for DDT (excerpt)

By Donald Roberts
Bethesda, Md.

DDT, the miracle insecticide turned environmental bogeyman, is once again playing an important role in public health. In the malaria-plagued regions of Africa, where mosquitoes are becoming resistant to other chemicals, DDT is now being used as an indoor repellent. Research that I and my colleagues recently conducted shows that DDT is the most effective pesticide for spraying on walls, because it can keep mosquitoes from even entering the room.

The news may seem surprising, as some mosquitoes worldwide are already resistant to DDT. But we've learned that even mosquitoes that have developed an immunity to being directly poisoned by DDT are still repelled by it.

Malaria accounts for nearly 90 percent of all deaths from vector-borne disease globally. And it is surging in Africa, surpassing AIDS as the biggest killer of African children under age 5.

From the 1940s onward, DDT was used to kill agricultural pests and disease-carrying insects because it was cheap and lasted longer than other insecticides. DDT helped much of the developed world, including the United States and Europe, eradicate malaria. Then in the 1970s, after the publication of Rachel Carson's Silent Spring, which raised concern over DDT's effects on wildlife and people, the chemical was banned in many countries. Birds, especially, were said to be vulnerable, and the chemical was blamed for reduced populations of bald eagles, falcons, and pelicans. Scientific scrutiny has failed to find conclusive evidence that DDT causes cancer or other health problems in humans.

Today, indoor DDT spraying to control malaria in Africa is supported by the World Health Organization; the Global Fund to Fight AIDS, Tuberculosis and Malaria; and the United States Agency for International Development.

It would be a mistake to think we could rely on DDT alone to fight mosquitoes in Africa. Fortunately, research aimed at developing new and better insecticides continues—thanks especially to the work of the international Innovative Vector Control Consortium. Until a suitable alternative is found, however, DDT remains the cheapest and most effective long-term malaria fighter we have.

A New Home for DDT (excerpt)

Author: Donald Roberts, professor emeritus of tropical medicine and board member of nonprofit Africa Fighting Malaria
Source: Opinion Editorial, The New York Times.
http://www.nytimes.com/2007/08/20/opinion/20roberts.html?_r=0.\
Published: The New York Times, August 20, 2007.

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