Chapter Summary of *Silent Spring*

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Overarching theme: web of life

Chapter	Big Idea
1. A Fable for Tomorrow	-A bucolic town suffers a strange blight -"A grim specter has crept upon us almost unnoticed, and this imagined tragedy may easily become a stark reality we all shall know." (3)
2. The Obligation to Endure	-The rapid development of a war on nature. -The proliferation of introduced species and insects and the chemical response. -"The rapidity of change and the speed with which new situations are created follow the impetuous and heedless pace of man rather than the deliberate pace of nature." (7)
3. Elixirs of Death	-The development of the chemical industry following the Second World War and specifically synthetic pesticides. -Specific examples (DDT, chlordane, dieldrin, aldrin, endrin, and organic phosphates, parathion, malathion, arsenic compounds) -The systemic nature of insecticides -Slow does not equal harmless; chemicals build up through the food chain -"DDT is now so universally used that in most minds the product takes on the harmless aspect of the familiar." (20)
4. Surface Waters and Underground Seas	-"The problem of water pollution by pesticides can be understood only in context, as part of the whole to which it belongs—the pollution of the total of environment of mankind." (39) -The unseen and invisible nature of water pollution -Specific examples: drinking water in Pennsylvania, spruce budworm spraying with DDT, Army Chemical Corps in Colorado, weedkiller 2,4-D, Tule Lake DDD and DDE, Clear Lake DDD -"Water must also be thought of in terms of the chains of life it supports—from the small-as-dust green cells of the drfting plant plankton, through the minute water fleas to the fishes that strain plankton from the water and are in turn eaten by other fishes or by birds, mink, raccoons—in an endless cyclical transfer of materials from life to life." (46) -"Here again we are reminded that in nature nothing exists alone." (51)
5. Realms of the Soil	-"Yet if our agriculture-based life depends on the soil, it is equally true that soil depends on life, its very origins and the maintenance of its true nature being intimately related to living plants and animals.' (14) -"We are not therefore confronted with a second problem. We must not only be concerned with what is happening to the soil; we must wonder to what extent insecticides are absorbed from contaminated soils and introduced into plant tissues." (59) -Specific examples: earthworm, arsenic, South Carolina sweet potatoes for baby food

6. Earth's Green Mantle	-"Our attitude toward plants is a singularly narrow one. If we see any immediate utility in a plant we foster it. If for any reason we find its presence undesirable or merely a matter of indifference, we may condemn it to destruction forthwith." (64) -Specific examples: sage brush, Maine roadsides, bees, effects of 2,4-D on animals and people, crabgrass, Klamath weed -"Nature herself has met many of the problems that now beset us, and she has usually solved them in her own successful way. Here man has been intelligent enough to observe and to emulate Nature he, too, is often rewarded with success." (81)
7. Needless Havoc	-"Under the philosophy that now seems to guide our destinies, nothing must get in the way of the man with the spray gun. The incidental victims of his crusade against insects count as nothing; if robins, pheasants, raccoons, cats, or even livestock happen to inhabit the same bit of earth as the target insects and to be hit by the raid of insect-killing poisons no one must protest." (85-86) -"Incidents like the eastern Illinois spraying raise a question that is not only scientific but moral. The question is whether any civilization can wage relentless war on life without destroying itself, and without losing the right to called civilized." (99) -"By acquiescing in an act that can cause such suffering to a living creature, who among us is not diminished as a human being?" (100) -Specific examples: Japanese beetles and failure of eradication schemes, milky disease as grub control
8. And No Birds Sing	-Letters from housewives reporting decreased birds -The link from spray on vegetation to bird life; impact on both bird food source and reproductive ability -Specific example: Dutch elm disease (fungal), robins, eagles, England, foxes -"This sudden silencing of the song of birds, this obliteration of the color and beauty and interest they lend to our world have come about swiftly, insidiously, and unnoticed by those whose communities are as yet unaffected." (103) -"But such rabbits or racoons or opossums as may have roamed those bottomlands and perhaps never visited the farmers' cornfields were doomed by a judge and jury who neither knew of their existence nor cared." (126) -"Who has made the decision that sets in motion these chains of poisonings, this ever-widening wave of death that spreads out, like ripples when a pebble is dropped into a still pond?" (127)
9. Rivers of Death	-The pesticide threat to fish -Specific examples: New Brunswick salmon, lifecycle of salmon and insects, Maine, Yellowstone National Park, fire ants, Flint Creek Alabama, milkfish farming, Texas, fiddler crab, shrimp, shellfish -"The place of the fiddler crab in the ecology of the world it inhabits is a necessary one, not easily filled." (148) -"We know that pesticides contained in runoff from farms and forests are now being carried to the sea in the waters of any and perhaps all of the major rivers. But we do not know the identity of all the chemicals or their total quantity, and we do not presently have any dependable tests for identifying them in highly diluted state once they have reached the sea. Although we know that the chemicals have almost certainly undergone change during the long period of transit, we do not know whether the altered chemical is more toxic than the original or less. Another

	almost unexplored area is the question of interactions between chemicals…" (151-2)
10.Indiscriminately from the Skies	-Specific examples: g*psy moth (now called spongey moth), fire ants (*cf* wasps and bees), cows and milk -"'Eradication' means the complete and final extinction or extermination of a species throughout its range. Yet as successive programs have failed, the Department has found it necessary to speak of second or third 'eradications' of the same species in the same area." (157) -"The suit brought by the Long Island citizens at least served to focus public attention on the growing trend to mass application of insecticides, and on the power and inclination of the control agencies to disregard supposedly inviolate property rights of private citizens." (159)
11. Beyond the Dreams of the Borgias	-Household use of insecticides and household safety concerns -Specific examples: household and lawns -Call to action: limitation of chemical pesticides and investigation of non-chemical pest control -"If a huge skull and crossbones were suspended above the insecticide department the customer might at least enter it with the respect normally accorded death-dealing materials. But instead the display is homey and cheerful, and, with the pickles and olives across the aisle and the bath and laundry soaps adjoining, the rows upon rows of insecticides are displayed." (174)
12. The Human Price	-The ecology within our bodies, varied and delayed effects of chemical poisoning -Specific examples: human self-experimentation -"As the tide of chemicals born of the Industrial Age has risen to engulf our environment, a drastic change has come about in the nature of the most serious public health problems." (187) -"Where do pesticides fit into the picture of environmental disease? We have seen that they now contaminate soil, water, and food, that they have the power to make our streams fishless and our gardens and woodlands silent and birdless. Man, however much he may like to pretend the contrary, is part of nature. Can he escape a pollution that is now so thoroughly distributed throughout the world?" (188)
13. Through a Narrow Window	-Cellular structures and processes -Impact of chemicals on reproduction and genetic deterioration -Specific examples: mustard gas, herbicide 2,4-D -"The living cell assaulted by radiation suffers a variety of injuries: its ability to divide normally may be destroyed, it may suffer changes in chromosome structure, or the genes, carriers of hereditary material, may undergo those sudden changes known as mutations, which cause them to produce new characteristics in succeeding generations. If especially susceptible the cell may be killed outright, or finally, after the passage of time measured in years, it may become malignant." (208)
14. One in Every Four	-cancer -Specific examples: arsenic, DDT, variety of cancers, global stories -"It would be unrealistic to suppose that all chemical carcinogens can or will be eliminated from the modern world. But a very large proportion are by no means necessities of life. By their elimination the total load of carcinogens would be

	enormously lightened, and the threat that one in every four will develop cancer would at least be greatly mitigated." (242)
15. Nature Fights Back	-The balance of nature: insects developing resistance to pesticides -Specific examples: coyotes, spider mites, fire ants, malaria -"In some quarters nowadays it is fashionable to dismiss the balance of nature as a state of affairs that prevailed in an earlier, simpler word—a state that has now been so thoroughly upset that we might as well forget it. Some find this a convenient assumption… The balance of nature is not the same today as in Pleistocene times, but it is still there: a complex, precise, and highly integrated system of relationships between living things which cannot safely be ignored any more than the law of gravity can be defied with impunity by a man perched on the edge of a cliff." (246)
16. The Rumblings of an Avalanche	-History of insect resistance to control across the globe -Evolutionary mechanisms of resistance (272) -Specific examples: ticks, flies, malarial mosquitos, cockroaches, bedbugs, -"Sometimes resistance develops so rapidly that the ink is scarcely dry on a report hailing successful control of a species with a specific chemical when an amended report has to be issued." (265)
17. The Other Road	-"The choice, after all, is ours to make. If, having endured much, we have at last asserted our 'right to know,' and if, knowing, we have concluded that that we are being asked to take senseless and frightening risks, then we should no longer accept the counsel of those who tell us that we must fill our world with poisonous chemicals; we should look about and see what other course is open to us." (277-8) -Insect sterilization for control -Use of insect pheromones etc. as attractants or repellants -Microorganisms and bacteria -Use of sound for control -Specific examples: screw-worm, tsetse fly, bacteria and viruses, ants, spiders, mammals -"The predator and the preyed upon exist not along, but as part of a vast web of life, all of which needs to be taken into account." (293) -calls for different approaches in different places, eg. woodland vs farmland -"It is our alarming misfortune that so primitive a science has armed itself with he most modern and terrible weapons, and that in turning them against the insects it has also turned them against the earth." (297)