THE CONSCIENTIOUS GARDENER

Awareness, awareness, awareness – followed by right action.

Such is Sarah Hayden Reichard's message in *The Conscientious Gardener: Cultivating a Garden Ethic* (254pp, U. of California Press, 2011).

Learn about your climate, your watershed, the composition of your soil, local native and invasive plants and animals – and adjust your gardening practices accordingly.

Humans now use 160% of the earth's sustainable capacity ongoing – up 70% since 1970. Americans alone consume nearly a quarter of the world's resources and 200 million of us are gardeners, so we can substantially impact our planet's fortunes.

Because it's not easy to improve soil with amendments, have yours tested and work with what's there. Fertilizer can destroy soil microorganisms and may attract plant-eating insects, so use it sparingly on vegetables and fruits, never on ornamentals. Avoid deep tilling, which destroys the soil's structure and its food web.

Mulches can lower soil temperatures dramatically, crucial to responsible gardening in our hot summers. Choose them carefully, though – wood chips and compost serve well. But find alternatives for sphagnum peat moss – such as coconut peat, alfalfa, etc. – to avoid further reducing peat bogs, which sequester enormous amounts of carbon. Avoid oil-derived plastic sheeting, vermiculite (which may contain asbestos), ground up, and toxic, rubber tires, even

decorative bark, which can be high in salt from logs held in sea water.

In short, be a good soil steward. Determine a material's source, whether it's harvested sustainably, and if it's local – so you don't import pests.

Since we all live in watersheds, everywhere is downstream for someone. Find out where the water on your property flows, and take responsibility for it. Hardscapes – roofs, asphalt, concrete – increase runoff speed and carry pollutants that may be cleansed if they pass through soil, so replace these hardscapes wherever you can – with a gravel driveway, a stepping stone sidewalk, a green roof. Install swales and rain gardens to catch roof runoff, plant vegetation in layers -- from annuals to bushes to trees -- to slow rainfall hitting the soil. If you live near a stream, replace rip rap with native plants. Consider replacing your lawn with xeriscape plantings or ecoturf.

Whatever you plant may eventually migrate from your city or your neighborhood – wind, birds, automobile tires, and plant exchanges will distribute seeds. So learn about the invasives and natives in your area. Imported California poppies, Eschscholzia californica, (most seed is grown in the Netherlands) interbreed with native strains, and to what effect? We don't know. Closely related cultivars of rare and endangered plants can interbreed and weaken the natives' gene pool – so find out what they are and avoid growing them.

Control of invasive plants costs $25 billion a year in the U.S. alone, so note and remove any you find.

If you don't see wildlife as competitors for fruit, vegetables, or ornamentals, attract them by providing food

(suitable plants), shelter (hedgerows, brush piles) and water. But never deliberately introduce wild creatures – let them find you – and don't let them become the cat's lunch.

If you do see wildlife as competitors, you can still harmlessly invite pollinators and bats, both gardeners' allies.

To control insect pests, Reichard suggests calculating allowable damage, prevention through knowing what triggers outbreaks, and control through the least harmful methods, beginning with mechanical barriers.

To address global warming, she suggests protecting important carbon sequesters such as trees and undisturbed soil, limiting use of 2-stroke engines, becoming a locavore. And, since each American generates 4-5 pounds of garbage daily, consumer restraint.

She ends with a quote from Aldo Leopold: "a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

Thanks to repeated summaries of key points and an extensive invasive plant list, the book makes a handy reference.