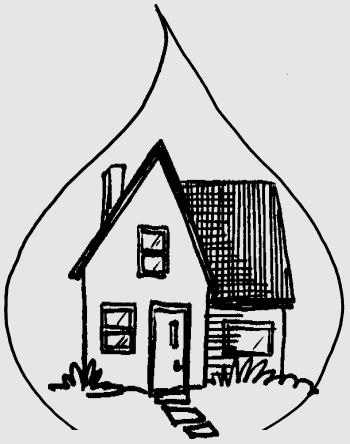

There are many ways to reduce the amount of household trash you produce, and many alternatives for disposing the wastes you do make. This assessment helps you examine your current waste disposal practices and how they may affect air and water quality on your property. It covers:

1. Reducing the amount of trash you produce

2. Creating methods to deal with waste

3. The hazards of disposing of wastes on your property

Home*A*Syst
for New Jersey

Managing Household Trash:
Waste Prevention, Reuse, Recycling and Composting

Why should you be concerned?

As the U.S. population increases, the amount of trash produced each year also rises. Not only are there more people, but each person is producing more waste than in the past. Studies estimate that in 1990 each person produced around 4.3 pounds of wastes each day, compared with 2.7 pounds in 1960. Surveys also found that most consumers do not realize what is in their own trash. Many, for example, think they throw away more plastics—by weight—than they really do, or that disposable diapers are a major problem (they aren't). Figure 1 shows what is in the mountain of solid waste thrown away by Americans each year. What would you find if you examined unwanted "wastes" from your household over a year's time?

How many words for Garbage?

What do you call the stuff you want to get rid of? — trash, garbage, solid waste, recyclables, refuse or junk? Here's how we define it for this assessment.

"Trash" and "Waste." These two terms refer to all items and materials that are no longer wanted — and include the following:

"Reusables" are items that are used again by a different user, or for a different purpose. Like a hand-me-down jacket or a jar used for a cup or to store leftovers, they are not re-processed into raw materials.

"Recyclables" are materials like glass, metal, paper—even refrigerators—that are processed back into raw materials and made into new products.

"Compostable or compost" refers primarily to yard and food wastes that can decompose and return to the earth as nutrients or soil.

"Garbage" is the stuff that gets truly "thrown away" by being taken to a landfill or burned.

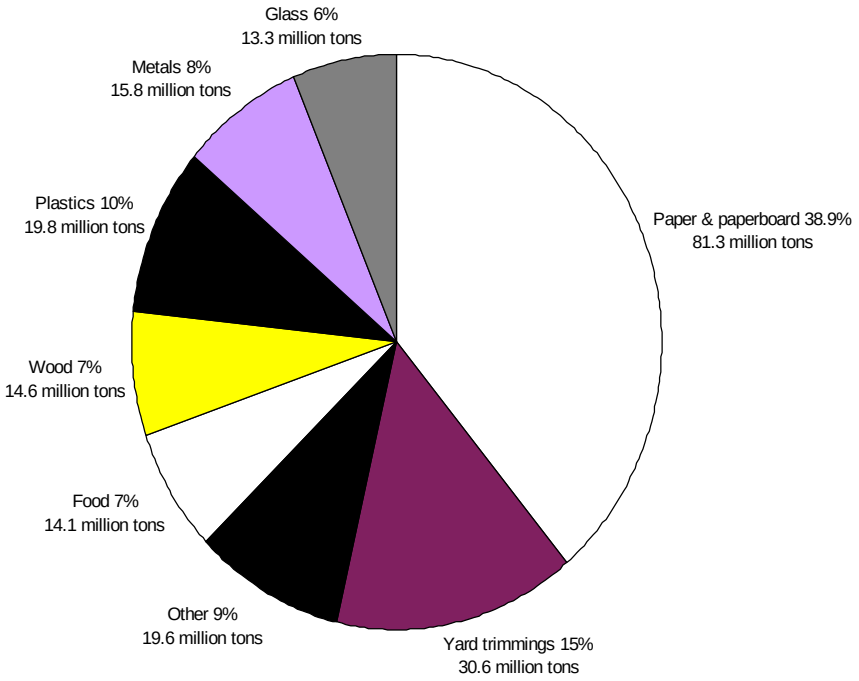

Figure 1. What is in our solid waste?
(from Characterization of Municipal Soild Waste in the United States: 1995 Update, Report # EPA 530-S-96-001, March, 1996, USEPA, Washington, DC)

The problem with waste. Landfills and incinerators are the destination of most of our trash. But because of growing public concern about landfill location and stricter disposal regulations in many parts of the country, landfill space is becoming scarcer and more expensive. Environmental laws have forced many dumps and incinerators to close or modernize, costing taxpayers million of dollars. In areas without nearby disposal options, consumers are paying premium rates to have garbage hauled hundreds of miles to be buried or burned. As a result, garbage has become a major environmental and economic issue for consumers and municipalities. The good news is that these problems have caused Americans to look for new ways to deal with their trash. Producing less waste, reusing, recycling and composting can save taxpayer dollars, as well as protect air and water quality and the health of people and wildlife.

Part 1 — Minimizing and Preventing Waste

If you don't produce trash, you won't need to get rid of it — it's that simple. But since we all generate at least some trash, we need to think about ways to make less. Part 1 helps you examine your potential for cutting the amount of waste you produce, and for "preventing" some kinds of waste completely. At the end, fill out the assessment table to determine your waste-potential, using the information below to help answer the questions.

Can you become a waste-conscious shopper?

You make purchasing decisions every day, and each purchase involves a certain amount of waste. Whether buying groceries, toys, furniture or appliances, your selections determine the type and volume of waste that must someday be discarded. But if you buy with the environment in mind — that is, if you use your purchasing power to minimize your impact on the environment — you will select products that produce a minimum of waste. "Precycling" and "enviro-shopping" are terms that refer to this kind of purchasing. The following questions are ones typically asked by an "enviro-shopper" before a purchase is made.

How much do I need?

Among other things, enviro-shopping means buying only what you need. A good price or bulk package may make it tempting to buy a larger amount of paint, food, or household cleaner than you really need. But what may seem like a "good deal" when buying often ends up wasting money, because the unused or spoiled product is eventually thrown away. Make sure you can use what you buy, or know someone who can use the leftovers.

Are my purchases long lasting and reusable?

In our "throwaway" society, it is sometimes hard to find good quality products at an affordable price. Although durable products may be more expensive, they are usually a better investment in the long run. Look for products that can be fixed when broken. Children's toys that are held together with screws, for example, often can be more easily taken apart and repaired than toys that are glued. Long lasting products make good hand-me-downs, too. Products and materials that can be reused—passed along or used for other purposes—save money and conserve resources. If you have fabric scraps, for example, they can be sewn into attractive, reusable gift bags which can reduce your need to buy wrapping paper. In a world with increasing numbers of "disposable" and single-use products — it is a real challenge to avoid waste when shopping.

How much trash do you make each day?

This project is for the truly adventurous: Carry a large plastic bag for 1-3 days and put all of your daily trash inside. Pick a "typical" week, and don't change your buying or eating habits. At the end of the experiment, weigh the bag. If you carried your bag for three days, divide the total weight by three to get the daily amount. You might want to keep wet wastes in plastic zip-top bags so things don't get too messy. Then do an analysis of your trash: How much of the total is paper? How much is recyclable and how much is hazardous? How much could have been avoided? How many pounds of trash would you produce in a year?

Is the product package recyclable?

Many product containers and packaging materials are potentially recyclable — such as glass bottles, plastic bags and cardboard boxes. To promote recycling, many manufacturers use the international chasing-arrows "recyclable material" symbol (see Figure 2). But be careful; the symbol only means the product is made from materials which are suitable for recycling if your local recycling program will take them. If it cannot be recycled locally, then the product package is not truly recyclable, at least not where you live. Most counties mandate the recycling of glass containers, aluminum and tin cans, plastic beverage containers, newspapers, commercial cardboard, office paper, and leaves for compost. Additional materials may also be recycled by your municipality, so contact your recycling coordinator for specific requirements or consult your municipality's annual recycling guide, if available. The list of materials that your local program will accept probably changes over time, so you will need to keep up to date.

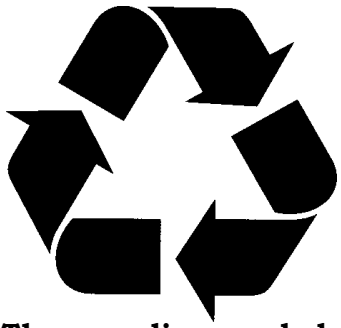

Figure 2. The recycling symbol means the product or packaging is recyclable. But if your local recycling program won't accept the product, it isn't really recyclable -- at least not where you live.

Is the product or its packaging made from recycled materials?

There are a surprising variety of products made from recycled material: everything from carpets to salad dressing bottles. Once materials are recycled, they will be made into new products or packaging only if there is a market for them. As a consumer, you can use your buying power to support and encourage markets for recycled material products. This is sometimes called "closing the loop" — when you recycle and buy recycled. This ensures that materials are used again and again. Each year, for example, billions of aluminum beverage cans are melted down and made into new cans. On product packaging, look for the words "made from recycled materials," and especially for "made from post-consumer recycled materials." Post-consumer means that all or part of the packaging is made from materials that have been recycled by consumers in community recycling programs.

Do I buy products with the least amount of packaging?

In America, we produce more trash per person than anywhere else in the world. And about a third of the paper, plastic, glass, cardboard and metal we throw away comes from packaging. While packaging serves many useful purposes — such as preventing food spoilage and keeping products clean — much is unnecessary, wastes natural resources, and soon after purchase ends up as garbage.

Good enviro-shopping means choosing products having the least amount of wrapping (as long as safety is assured). Buying bulk foods and selecting concentrated packaged products are examples of minimizing waste from packaging. If your packaging selections are limited, tell the store manager what you want and don't forget to write or call the product manufacturer about your community's solid waste situation and your preference for minimally packaged products.

Assessment 1 — Preventing and Minimizing Waste

Use the table below to identify areas where you can minimize waste. Write your waste-potential level (1, 2, or 3) in the column "Your Waste Potential." Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information above to help you answer the questions.

Responding to Your Waste Potential

Your goal is to reduce the amount of waste you produce — especially waste that ends up in a landfill or incinerator. Turn to the Action Checklist on page 113 to record the high and medium waste potentials you identified in the table above. Use the ideas in Part 1 to help you become an "enviro-shopper."

ASSESSMENT 1 — Preventing and Minimizing Waste

	LOW WASTE POTENTIAL	MEDIUM WASTE POTENTIAL	HIGH WASTE POTENTIAL	YOUR WASTE POTENTIAL
Packaging selected	I usually select packaging that minimizes wastes.	I sometimes consider packaging when selecting products.	I never consider packaging that minimizes waste.	
Recyclability of packaging	I regularly purchase containers/packaging that can be recycled locally.	I sometimes consider recyclability when making purchases.	I never consider recyclability.	
Quantities purchased	I only buy what I need and avoid accumulating unused products.	I sometimes buy more product than I can use.	I often buy more product than I can use.	
Product durability and potential for reuse	I select products based on their durability, ease of repair, and potential for reuse.	I sometimes consider durability, ease of repair, and potential for reuse.	I never consider durability, ease of repair, and potential for reuse.	

Part 2 — Reuse, Recycling and Composting

Once you make waste, it has to go somewhere. Part 2 reviews three ways to keep materials out of the landfill or incinerator. For each item of trash, there are three questions to ask:

First, is it reusable? Reuse should be your first objective, because it typically causes the least amount of environmental impact. Refillable glass beverage bottles are a good example. Empty bottles are collected and trucked back to the bottler, where they are washed and refilled. To compare this to recycling, see the story about glass recycling in the next section.

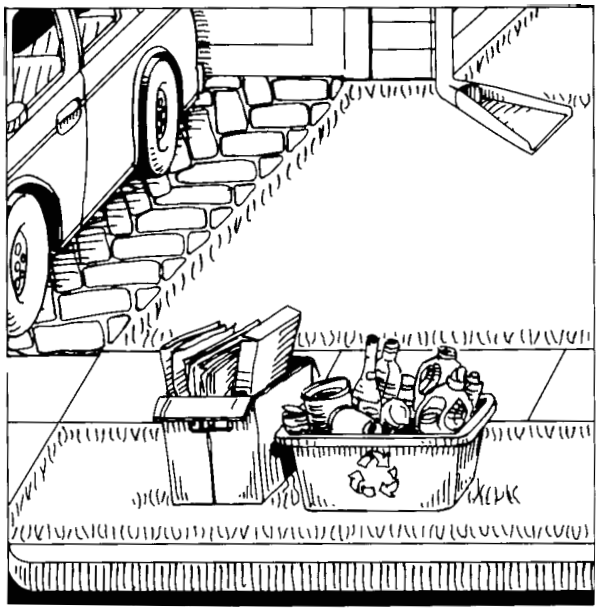

Figure 3. Find out what is recyclable in your area and how to prepare items for recycling.

Sharing old clothes and used furniture is common form of reuse. If you can't share with friends or family, try to donate usable items to programs like Goodwill or The Salvation Army. Holding a neighborhood yard sale is a good way to eliminate unwanted possessions and make a little money. You can usually find uses for more materials than you realize. Give your packaging foam "peanuts" to a local gift shop, for example, or see if neighbors can use your excess paint, lumber or empty plastic pails. Try listing available materials on a postcard and posting it on a local community bulletin board. Remember the expression, "One person's junk is another's treasure." Often, reuse is limited only by the imagination.

Second, is it recyclable? Even though recycling is a good idea, it still requires the input of energy and other resources, and produces waste and pollution. For empty glass bottles to be recycled into new bottles, for example, they must be collected, sorted, crushed, and trucked to a glass factory, where they are washed, melted, and re-formed into new bottles. The new bottles are then trucked to the beverage company to be filled.

Studies have shown that more than half of all household wastes are recyclable. Remember to keep current about what your local recycling program will accept by calling your recycling coordinator. You should not limit recycling to typical grocery store purchased materials such as aluminum cans, cardboard, glass bottles, and cans. Many counties have recycling centers that accept items such as household batteries, lead acid batteries, waste oil, oil filters, antifreeze, white goods (appliances), tires, phone books, and paint cans. There may be local scrap dealers or industrial salvage yards that want your broken appliances, junk vehicles, wood wastes, other metals, doors, windows and so on.

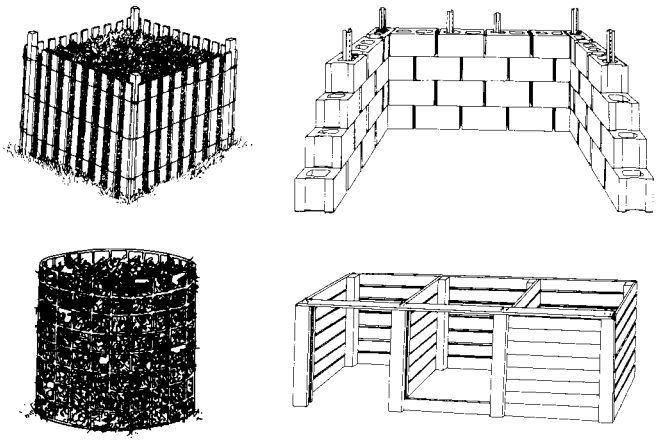

Figure 4. Examples of compost bins made with snow fence, concrete blocks, wire mesh, and pressure-treated wood.

Third, can it be composted? Yard and food wastes typically make up 10-25% of the wastes going into landfills. Your home's amount of yard and food wastes depends on your eating and gardening habits, size of yard, and region. Landfills in New Jersey have banned yard waste from disposal because of its large volume, high moisture content, and potential to contribute to landfill gas and groundwater problems. Composting—or "nature's recycling"—is a much more effective way to handle organic waste. As an alternative to landfill disposal, many counties have recycling centers that will accept leaves, light brush and grass from residents and landscapers. Check with your recycling coordinator.

Composting is a natural process which turns kitchen and garden wastes (with the help of microbes, earthworms and fungi) into a high-quality soil conditioner. Many common materials can be composted in your own backyard: leaves, grass clippings, plant trimmings, straw, kitchen scraps (but avoid animal products like fat, bones or pet wastes, as they may attract pests and have pathogens that the heat from a home compost pile cannot kill), and manure. The final product is a dark brown, crumbly compost that has a clean, earthy scent. It can be spread on lawns or mixed with garden soil as an excellent natural fertilizer. To compost at home there are many compact and efficient recycling bins on the market, or you can build your own. For kitchen scraps, you might even try worm composting. With a box of red wrigglers indoors you can compost kitchen vegetable wastes year round. It may sound a bit odd, but worm composting is a clean, good smelling, and efficient way to get rid of food scraps — and it's educational, too.

Assessment 2 — Reuse, Recycling and Composting

Use the table below to identify preferred methods to keep waste out of the landfill. Write your waste potential level (1, 2, or 3) in the right-hand column. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information above to help you answer the questions.

Responding to Your Waste Potential

Your goal is to reduce waste or find the best alternatives for dealing with it. Turn to the Action Checklist on page 113 to record the high and medium waste potentials you identified above. The information in Part 2 can help you plan improvements to make.

ASSESSMENT 2 — Reuse, Recycling and Composting

	LOW WASTE POTENTIAL	MEDIUM WASTE POTENTIAL	HIGH WASTE POTENTIAL	YOUR WASTE POTENTIAL
Reuse and recycling	I recycle or reuse as many household wastes as possible.	I reuse or recycle when it is convenient to do so.	I never reuse or recycle.	
Composting	All my yard wastes and kitchen vegetable scraps are composted at home or in a county or municipal program.	Some of my yard and kitchen wastes are composted.	I never compost.	

Byproducts of Open Burning

Smoke, particles, or ash from burning waste may contain some of the following pollutants:

- **Arsenic** from some wood preservatives or pesticides
- **Benzene** and other solvents from some paint or varnish strippers
- **Cadmium** from nickel-cadmium batter ies and plastics such as PVC
- **Carbon Monoxide** from incomplete combustion
- **Chromium** from colors in some colored paper and paints
- **Dioxin** from byproducts formed when chlorine containing products such as some plastics are burned
- **Formaldehyde** from some particle board and fabric treatments
- **Hydrochloric acid** from some mixed waste paper
- **Lead** from some paint on old boards, batteries, and PVC plastics (lead is used as a stabilizer in PVC)
- **Mercury** from some batteries, paints, plastics, and fluorescent lights
- **Nitrogen oxide** from some colors and inks
- **Sulfuric acid** from some chemicals, dyes and pigments, rayon, and film

Part 3 — The Trouble With On-Site Trash Disposal

Disposing of household trash by burning or dumping on private property is widely practiced, but can pose threats to your health and the environment. Although many rural areas have used these disposal methods for decades, local and state laws have become more restrictive. At the end of this section, complete the table to determine your risks, and consider alternatives to on-site methods of disposal.

Do you burn your garbage?

Many rural residents use burn barrels to get rid of household wastes. When paper, plastics, printing inks, batteries and other common materials are burned, a noxious mix of chemicals is released into the air. Some of these—such as lead or mercury—can be hazardous to breathe.

Eventually, most by-products from burning are removed from the air by rain or snow and are deposited on land or in water. Due to concerns about such depositing of hazardous air pollutants, most states, including New Jersey, have passed laws to restrict if or what you can burn. In most areas, especially urban and suburban settings, open burning has been banned.

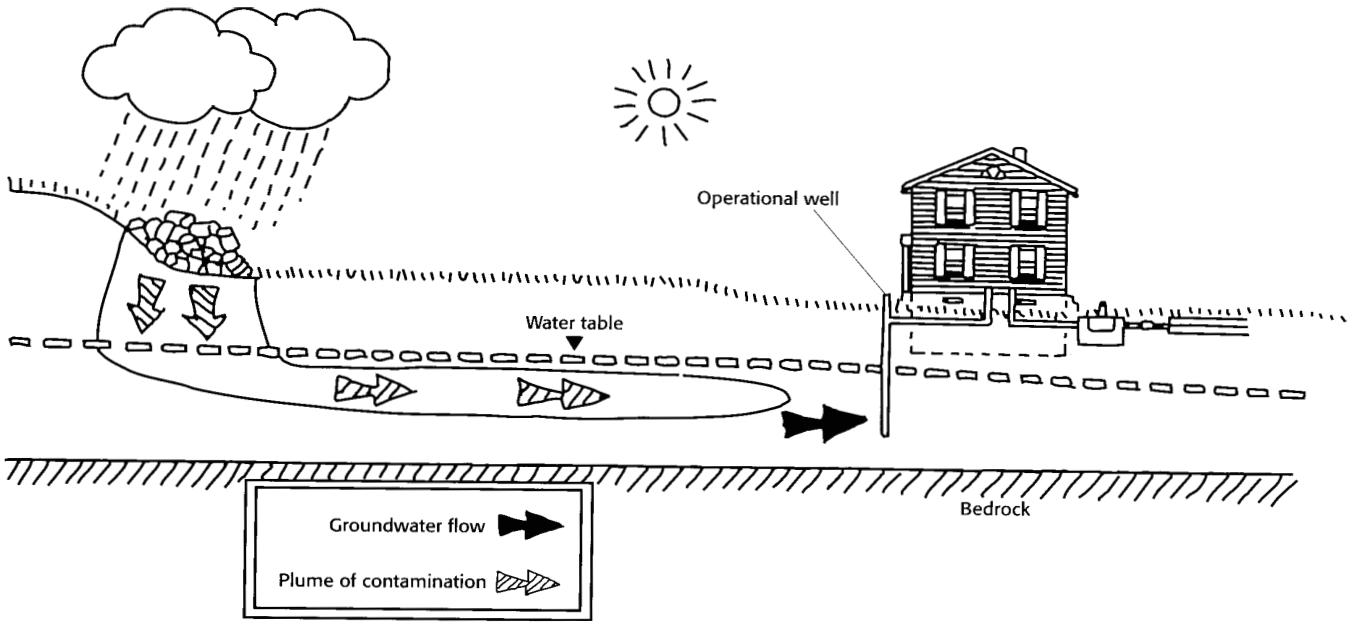

Figure 5. Waste dumped on or near your property may contain harmful chemicals that can leach out and contaminate groundwater.

The ash residue from burning can also contain hazards — including heavy metals and other toxic substances — depending on what you burn. Even ashes from fireplaces and wood stoves can contain high levels of heavy metals and shouldn't be applied to your garden repeatedly or in large quantities. If this ash is dumped on your property, it can contaminate soil and water. Due to concerns about such releases of hazardous air pollutants, the open burning of household wastes is prohibited by New Jersey air quality laws.

Do you dump household trash on your land?

Trash dumped on your property is not only unsightly, it may contain harmful chemicals that can leach out and contaminate groundwater, or be spread by wind and rain. Discarded paint, for example, may contain lead or mercury. If not properly rinsed, pesticide containers will contain toxic residue, and used oil filters usually harbor petroleum products and harmful metals. These pollutants can soak into the soil, pollute well water, and find their way into nearby lakes, streams or wetlands. If your garbage contains hazardous substances—even in small quantities—they can cause problems.

Which wastes are hazardous?

By reading product labels, you can generally tell which ones have hazardous ingredients. Look for words such as DANGER, FLAMMABLE, POISON, or FATAL IF SWALLOWED. These are clues that a hazardous substance is present and that careful disposal is required—especially if unused portions of the product are in liquid form. Although dry chemicals can be hazardous, liquids can more easily injure waste haulers, react with other discarded chemicals to start fires or create deadly gases, or seep through soils and into water sources. The best approach for dealing with these products is to use them up so nothing is left to discard. For more information on deal-

ASSESSMENT 3 — Waste Disposal on Your Property

	LOW RISK	MEDIUM RISK	HIGH RISK	YOUR RISK
Burning trash	No household waste is burned on-site.		Mixtures of trash (including paper, solvents, batteries, and plastics) are burned, releasing metals, acids, and chlorine compounds. This is **ILLEGAL IN NEW JERSEY**.	
Dumping down storm drains or sewers	No household waste is discarded in a sewer system, septic system, or storm drain.	Some runoff from a driveway carries spills and yard chemicals away; runoff occasionally flows into storm sewers.	Hazardous and other wastes are improperly discarded in a sewer system, septic system, or storm drain.	
On-site dumping	No household trash is dumped on my property or on public property.		Household wastes and liquids, appliances, tires, and other junk are dumped on-site.	

ing with hazardous wastes, see the Home*A*Syst worksheet *Managing Hazardous Household Products*.

Especially for homes served by street drains and storm sewers, any solid or liquid wastes exposed to the weather—including pet wastes—can wash directly into lakes and steams. Storm sewers, remember, are rarely connected to wastewater treatment facilities. Some materials, like foam peanuts and other plastic debris, can be transported by storm runoff to open water where they may be mistaken for food and eaten by fish or birds. Another "wildlife" problem is caused by discarded tires which provide a haven for mosquitoes.

Assessment 3 — Waste Disposal on Your Property

The assessment on page 112 can help you examine potential risks due to on-site waste disposal. Choose the statement that best fits your situation, and put the appropriate number (1, 2 or 3) in the column labeled "Your Risk." Refer to the information above in Part 3 to help you respond.

Responding to Risks

Your goal is to reduce your risks. On the Action Checklist below, write all high and medium risks you identified. Use the ideas in Part 3 to help plan actions you can take.

ACTION CHECKLIST

Go back over the assessment tables and look for all medium and high waste potentials and risks you identified. Write them below. For each medium and high item listed, write down the improvements you plan to make. Use recommendations from this worksheet and other resources to decide on actions you are likely to complete. A target date will keep you on schedule. You don't have to do everything at once, but try to eliminate the most serious problems as soon as you can. Often it helps to tackle the inexpensive actions first.

Write all high and medium risks below.	What can you do to reduce the risk?	Set a target date for action.
Sample: Household trash is dumped on property.	Find out about town recycling program and try to buy products whose packaging can be recycled locally.	One week from today.

FOR MORE INFORMATION

Who to contact for more information about waste reduction and recycling.

Recycling, composting and waste disposal information. Contact your municipal or county recycling coordinator or municipal utilities authority to get the latest list of what is recyclable, how to identify it, and how to prepare it for recycling.

Recycling yard waste. Contact tyour municipal or county recycling coordinator or municipal utilities authority for information on recycling leaves, light brush, and grass and to pick up free compost and mulch.

How to compost. For information on how to compost your yard and food wastes, contact your county office of Rutgers Cooperative Extension. Request the following free factsheets:

FS 117 Using Leaf Compost
FS 389 Minimizing Waste Disposal: Grass Clippings
FS 826 Sources for Home Compost Bins

Books

J. Makower (1991) *The green consumer supermarket guide*. New York: Penguin Books.

William Rathje and C. Murphy (1992) *Rubbish! The archeology of garbage*. NY: Harper Collins.

This Home*A*Syst assessment does not cover all potential issues or risks related to solid waste management which could affect health or environmental quality. It is meant to serve as a starting point for identifying and addressing the most apparent risks. There are other Home*A*Syst worksheets — on a variety of topics — to help homeowners examine and address their most important environmental concerns.

This worksheet was written collaboratively by Shirley Niemeyer, Extension Specialist, University of Nebraska-Lincoln, Michael P. Vogel, Solid Waste Specialist, Montana State University Extension Service at Bozeman, and Kathleen Parrott, Virginia Polytechnic Institute and State University at Blacksburg.

This worksheet was adapted for use in New Jersey and technical review provided by Uta Krogman, Ph.D., Specialist in Solid Waste Management, Rutgers Cooperative Extension; Lisa Boyles, Program Associate in Solid Waste, Rutgers Cooperative Extension; Jan Larson, Program Associate in Resource Management, Rutgers Cooperative Extension of Ocean County.