



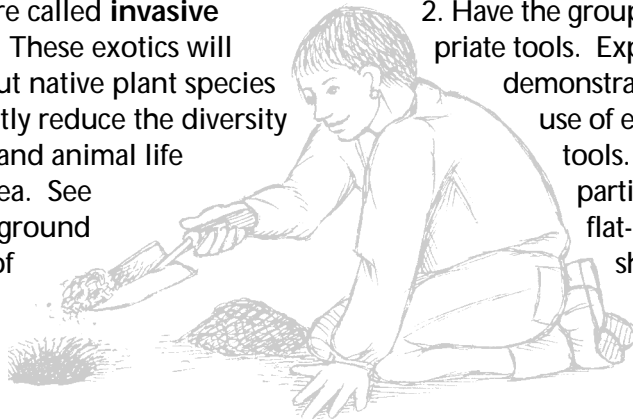
Breaking New Ground

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Background:

Breaking new ground will mean different things to different people. A group planting a habitat at the edge of a woods may decide to remove a few of the more aggressive shrubs and/or exotic plants, loosen the soil in selected spots and plant there. Some groups in more urban areas may have gotten permission to tear up asphalt, or they may have to build raised beds. A team putting a wildlife habitat in a wetland area would need to keep soil disturbance to a minimum. Once the group has assessed the possibilities of prepping their site, the digging, loosening, pruning, root cutting, and rock removal may commence.

More often than not, "new ground" will include a portion of lawn, often a tough mat of shallow-rooted, flat-bladed grass. It is important as a first step to remove this non-native, aggressive grass from the site. Aggressive plants that were introduced from another region are called **invasive exotics**. These exotics will crowd out native plant species and greatly reduce the diversity of plant and animal life in the area. See the background section of



"Plant Selection" for more information about invasive exotics.

Since the method of preparing a site is so variable for each site, the information included here is very general. Resources specific to a particular type of site and methods of site preparation might include regional gardening books, web-sites, a local expert, and/or a local garden center.

What to Do:

1. The group should first assess what sort of preparations they need to make for the site (i.e., debris removal, asphalt breaking, creating raised beds, etc.). A detailed site map (p. 245) will provide clues, as will a well thought out design (p. 262).

Note: Make sure you have identified all underground cable (electric, telephone, etc.) or water pipes before any digging begins!

2. Have the group select appropriate tools. Explain, and demonstrate the proper use of each of the tools. For example, participants using a flat-bladed shovel should only use it to cut into soil and pry, they should

Summary:

Participants begin the project by clearing and preparing the ground.

Grade Level:

2-12

Time:

2 to 8 hours or more, depending on size of habitat and number of participants

Learning Objectives:

Participants will be able to:

- ◆ Demonstrate basic use of gardening tools.
- ◆ Utilize basic safety precautions.
- ◆ Use tools to prepare site for planting.

Materials Needed:

Largely dependent on circumstances. The number of items will depend on number of participants. Some examples include:

- ◆ A flat-bladed, sharp shovel, for cutting sod, prying soil, or removing plants
- ◆ A pointed shovel
- ◆ Gardening gloves
- ◆ A hand mattock (looks a little like a small tomahawk), for cutting roots
- ◆ A wheelbarrow and buckets, to move plants, soil, or tools
- ◆ Pruning shears, to cut vines branches, or saplings
- ◆ A tree saw (curved blade) for larger work
- ◆ Stakes (and a mallet), string/rope, logs, or some system to mark off the area
- ◆ Pitchfork or hoe, to loosen the soil





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keep hands and feet away from the blade, and they should always keep the blade end below knee level.

Break into small groups and have participants practice using tools. If possible, assign a volunteer to assist each group. To prevent injury, it is important to review proper lifting techniques. Have participants practice lifting with their legs, knees bent and back straight.

Note: This is not a comprehensive set of safety precautions. Compile a set of safety precautions by contacting the tool's retailer, manufacturer, or other reliable source. Make sure to read all pertinent labels.

3. Assign specific jobs and areas for each participant and explain each

job as it comes up. (Some of the major job descriptions follow.)

4. Mark off the site. If the plan includes loosening a good deal of soil, take preventative measures so that a lot does not wash away. An erosion prevention device might be as simple as lining the plot with 3"-5" diameter logs and staking them in place.

5. Remove plants that will negatively impact the site, especially aggressive, fast-growing exotics. Try to leave native plants when possible, as they may be beneficial to the local wildlife. Watch carefully for poison ivy, poison oak, poison sumac, thorny plants, and stinging nettles. (If these plants grow in the area, and no one in the group knows

how to identify them, consult a field guide or a local expert.) The removal process will vary for different types of plants.

6. Since it is such a common and usually daunting task, here are some options for lawn grass removal:

- One option is to lay down cardboard on the plot, and cover the cardboard with at least 6 inches of leaf mulch. This not only kills the grass; it makes for good, rich soil. Starting this process in the fall gives the cardboard and mulch time to degrade. Planting should begin only after the cardboard has degraded enough for roots to maneuver through.
- Another way to kill the grass is to put a big piece of green or clear plastic over the plot and let it bake in the sun. If this is done in mid-summer, the grass is relatively short, and the plastic stays intact, it may take as little as two to three weeks. It may take a few months at other times of the year. It should be done when grass is actively growing (i.e., lawn-mowing season).
- Some people choose herbicides when working with very large plots of lawn grass. Only licensed professionals should handle herbicides. They are aware of safety issues, know what time of year to apply them, and know how much they need to apply. If this is the only option, do some research





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and recommend herbicides that biodegrade quickly and do not stay in the system for a long time. Otherwise herbicides can kill other plants, leach into and poison the groundwater, or run off into streams and do much more damage than was intended.

- A sod-cutter will cut the sod into strips, which can be rolled up, removed and saved for compost. An experienced adult should run this machine. Sod-cutters are available for rent at local equipment rental centers.
- A group with a small plot and a lot of muscle power can cut and pry out sod with a sharp, flat-bladed shovel. Cut small squares, about 1-2 inches deep, and pry out the pieces of sod. Set the squares aside and use them later for compost. Note, however, that lawn grass is hardy stuff; it will grow back (even upside-down!) given the chance. Several weeks under a plastic tarp in warm weather should kill it and make decent compost.

7. Once sod and any invasive plants are removed, where necessary cut roots and break apart tough soil with a hand mattock. Generally, it is not necessary to totally till the soil. In most areas the plants will do fine if the soil is loosened enough for roots to spread. The depth of soil to loosen depends on the needs of different plants.

8. Pull out medium-sized rocks, and set them aside. A rock pile on the site can provide shelter for beneficial insects, toads, chipmunks, etc. Leave small and really big rocks. The small ones will not hurt anything, but attempting to move the really big ones might hurt the mover. Removing a large rock will also leave a big, hard-to-fill cavity in the ground.

9. When the soil is ready, it is time to start planting!

Note: Have water, sunscreen, and a first aid kit available. Take appropriate rest breaks.

Questions:

- How can we use tools to break ground on our project?
- How much grass will we need to remove?
- How can we begin our project safely?

Adaptations:

Refer to general adaptations on pages 11-16.

Hearing Disabilities:

- Label each tool. After you demonstrate, have participants practice using tools in an open space before digging begins.
- Clearly mark a perimeter boundary with flags or rope.
- Ensure that participants are ade-

quately spaced for safety purposes.

- Use a flag or other visual symbol to indicate rest breaks or information briefs.
- Position yourself and the sign language interpreter so the participants can see you for further directions or warnings while in the field. Check in with participants periodically.

Learning/Cognitive Disabilities:

- Label each tool; use different colored dots for participants who have difficulty reading. After you demonstrate, have participants practice using tools in an open space before digging begins.
- Clearly mark a perimeter boundary with flags or rope.
- Ensure that participants are adequately spaced for safety purposes.
- Position yourself and any volunteers so the participants can see you for further directions or warnings while in the field. Check in with participants periodically.

Motor Disabilities:

Overall:

- Select a site that is largely accessible.
- If possible, have adaptive gardening tools available.
- Allow participants who are comfortable to work at ground level. If possible, provide a tarp for participants to sit on.
- Ensure that participants are adequately spaced for safety purposes.
- Allow participants to work on





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preparing any raised beds, planting boxes, or containers in the habitat.

- Provide bags or aprons with pockets to assist participants with carrying items as needed.

Visual Disabilities:

Overall:

- Clearly mark a perimeter boundary with a guide string.
- Use volunteers to promote safety, assist participants, and fully engage them in the activity.
- Give each participant and their partner adequate space to work for safety purposes.
- If your site is large, use a whistle to signify rest breaks or warnings.
- Allow participants who are comfortable to work at ground level. If possible, provide a tarp for participants to sit on.
- Position yourself and any volunteers so you can see the participants to ensure safety and make sure that all participants are actively engaged in the activity. Check in with participants periodically.

For participants with low vision:

- Paint or tape the handles of garden tools a bright color such as yellow to provide contrast to the grass and soil.

For participants who are blind:

- Give participants adequate space to work at the ground level.
- Have partners provide orientation

directions for safety.

- Consider having a practice session before hand for participants who have not had experience gardening.

- Allow participants to work on preparing any raised beds, planting boxes, or containers in the habitat.

