

GETTING STARTED WITH COMMUNITY COMPOSTING

Brought to you by:

Northeast Recycling Council

Compost Association of Vermont

Vermont Community Garden Network



HOW TO PARTICIPATE TODAY

Technical
Difficulties?
800 263 6317



Type a Question in the
Box

Today's presentation is being
recorded and will be provided within
48 hours.

A screenshot of a GoToWebinar interface. At the top, there is a dark blue header with a dropdown arrow and the word "Questions". Below this is a large white text input field with the placeholder text "[Enter a question for staff]". To the right of the input field is a grey "Send" button. Below the input field, there is a section with the text "Webinar Housekeeping" and "Webinar ID: 608-865-371". At the bottom of the interface is the GoToWebinar logo and name.

Special Appreciation

- High Meadows Fund
- Grassroots Fund
- Participating Solid Waste Districts



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Food Scrap Composting at Community Gardens

- 3-year pilot project to develop, monitor & evaluate small-scale, self-sustaining food scrap composting systems at community gardens
 - ✓ ≤ 100 cy/yr of feedstocks

INPUTS



**BINS OR BIN
MATERIALS, TOOLS,
EQUIPMENT**



FEEDSTOCKS



PEOPLE'S TIME

OUTPUTS



FINISHED COMPOST



**ENVIRONMENTAL
STEWARDSHIP**



EDUCATION



**COMMUNITY
ENGAGEMENT/
VOLUNTEERISM**

**SUPPORT &
VOLUNTEER
ASSESSMENT**



COMMUNITY SUPPORT

- Effective outreach is key!
- Communicate with your community about composting plans
- Adopt a good neighbor policy
- Engage & act upon complaints & issues



COMPOST SITE MANAGEMENT



- Roles & Tasks
 - ✓ Site Manager(s)
 - ✓ Compost Team/Helpers
- Seek partnerships
- Train all garden volunteers in compost basics

COMPOST SITE MANAGER(S)

- Overall management of the operation
 - ✓ Ensure proper system maintenance
 - ✓ Source materials as needed, etc.
- Recruits & trains compost team volunteers
- Creates & knows the volunteer schedule
 - ✓ Delegates tasks effectively
- Ongoing Communication



Photos: Calahan Community Garden, Burlington, VT

COMPOST TEAM/HELPERS

- Monitoring food scraps/other feedstocks
- Turning compost piles
- Sifting compost
- Distributing finished compost
- Providing education & outreach



Photos: left: Abby Foulk w/ student volunteers at Charlotte Central School, Charlotte, VT; right: neighbor food scrap contributor at La Plaza Cultural, Manhattan, NY

FEED STOCK COLLECTION





OR•GAN•ICS



Waste
Rescue
Reduction
food Composting
scraps



ACCEPTABLE MATERIALS

- Vegetable food scraps, peels
- Fruit food scraps, peels
- Nuts & nut shells
- Dairy, cheese
- Meat* (only in Hot Compost)
- Coffee grounds/filters & tea bags
- Leaves, garden trimmings
- Napkins, paper towels
- Sawdust
- Livestock bedding/manure



QUALITY BEGINS WITH THE GENERATOR



Image Cr.: Permies.com



Image Cr.: David Hurd

COLLECTION CONTAINERS

- Food scraps
 - ✓ 5 gallon buckets
 - ✓ Tubs
 - ✓ 12-32 gallon cans or carts
- Sawdust storage





Images Cr.: BioCycle.net



Image Cr.: Elements Mountain Compost



Kitchen Collection Buckets

Compostable Liners

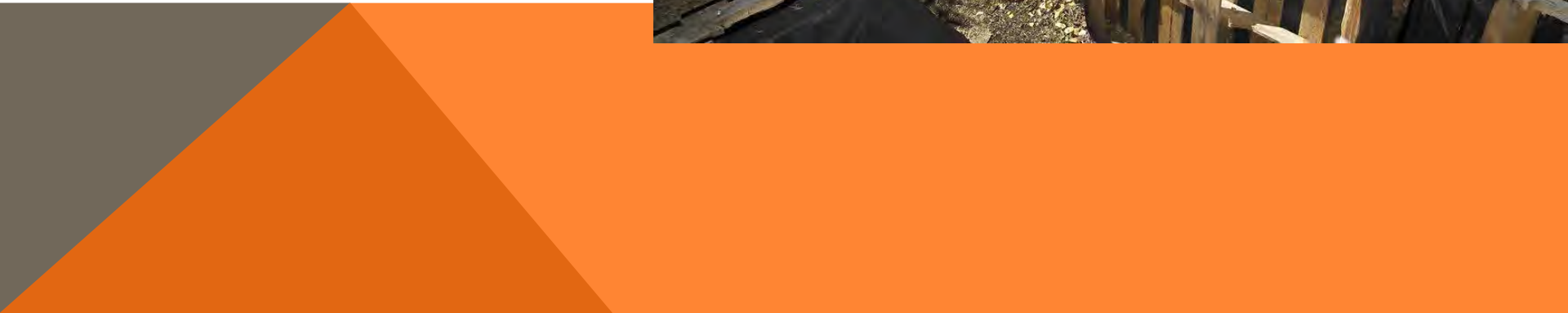




COLLECTION MONITORING

- Set designated days & times for food scrap collection/drop off
 - ✓ Match collection/drop-off with compost pile building
- Educate participants about feedstocks
 - ✓ Onsite orientation & clear signage





**SITING
CONSIDERATIONS**



What's Right for your site? **System Considerations**



Photos: upper left: Bakersfield Elementary Middle School, Bakersfield, VT; lower left: Red Hook Community Farm, Brooklyn, NY (photo credit NYC Master Composter Manual, DSNY); upper right: Charlotte Central School, Charlotte, VT; lower left: La Plaza Cultural, Manhattan, NY

System Considerations: Materials



Assess Volume of Materials:

Community need

People power

Site capacity

Permit limits > 100cy/yr. feedstock

Resources available

Photos: upper left: La Plaza Cultural, Manhattan, NY; upper right: Cornwall School, Cornwall, VT; lower right: Thetford Elementary School, Thetford, VT



TUMBLERS



COMPOST BINS



3-BIN SYSTEM



Photo Cr.: George McDonald, Maine DEP



WINDROWS & AERATED STATIC PILES



Images Cr.: David Hurd, GrowNYC



COMMUNITY COMPOST PLAN

- ✓ Composting method
- ✓ Safety & fire emergency plan
 - ✓ Security & vandalism concerns
- ✓ Monitoring techniques & record keeping
- ✓ Provisions for controlling odors
- ✓ Contingency plan



SITE LAYOUT

- Material receiving & mixing area
 - ✓ Food scrap drop-off
 - ✓ Carbon storage
- Active composting area
- Curing
- Finished compost



Image Cr.: NYC Master Composter Manual/DSNY



SITE

- Year-round accessibility
- Access to a water source is necessary
- Shrubbery, fencing, or cover to block wind
 - ✓ Insulation for winter
- Sit bins/piles on ground, grass or vegetated area
 - Tumblers can be mounted

PREPARING FOR WINTER





SET-BACKS

- At least 100' from wells & potable water sources
- Adequate distance from wetlands, surface water bodies (streams, ponds), & flood plains
 - ✓ Recommended at 200'
- Minimally 200' away from residences & 50' from property lines

EQUIPMENT/SUPPLIES

- Shovel and pitch fork
 - ✓ Or, bobcat/tractor
 - ✓ Trowels for tumblers
- Covered area for carbon storage
- Thermometer
 - ✓ For hot composting





SIGNAGE

- Simple, concise words & images
- List of acceptable materials at drop-off
- Active compost bin/area
- Curing compost
- Finished compost

WELCOME TO LA PLAZA CULTURAL COMPOST SITE



COMPOST INSTRUCTIONS



PLEASE FOLLOW THESE SIMPLE STEPS WHEN COMPOSTING WITH US

1

BEFORE YOU LEAVE YOUR HOUSE
CHOP YOUR FOOD SCRAPS



BETWEEN 1 TO 3 INCHES



2

DUMP YOUR FOOD SCRAPS INSIDE
METAL CAN



PICK THE ONE THAT IS THE
FULLEST

3

COVER YOUR SCRAPS WITH
BROWNS



BROWNS ARE FOUND IN ADJACENT
PLASTIC BINS

4

MIX SCRAPS AND BROWNS WELL
TOGETHER



MIXER IS HUNG IN FENCE
MAKE MIX FLUFFY

5

TOP WITH A FINE LAYER OF
BROWNS



NO FOOD SHOULD BE EXPOSED

6

REPLACE LIDS ON METAL CAN
AND PLASTIC BIN



ENJOY THE GARDEN!

QUESTIONS? CONTACT US AT DIEZPEDRO@GMAIL.COM

MANAGING THE COMPOST SYSTEM





Raw materials

Process

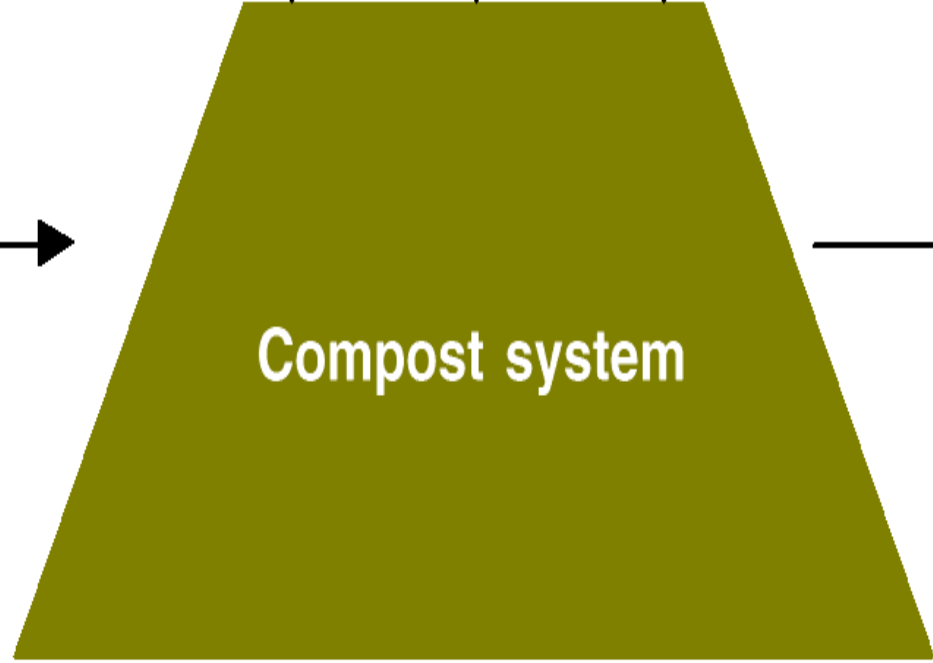
Product

Organic matter - including carbon, chemical energy, protein and nitrogen

Mineral nutrients - including nitrogen and other elements

Water

Microorganisms



water



heat



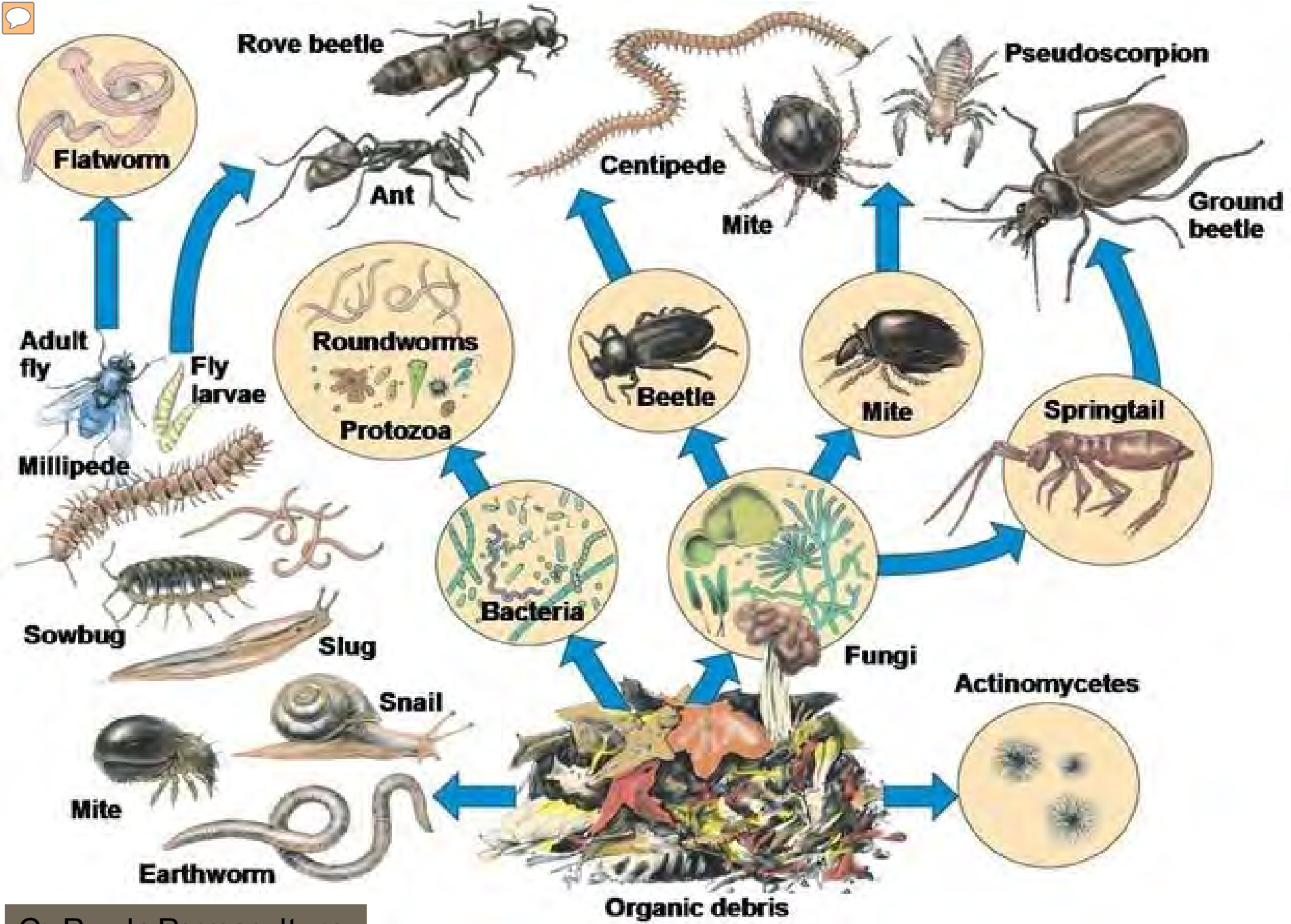
CO₂



Finished compost containing organic matter - including carbon, chemical energy, nitrogen, protein, humus, mineral nutrients, water and microorganisms



O₂





ELEMENTS OF COMPOSTING

- Aeration
 - ✓ Oxygen concentrations: 10-14+%
- Carbon to Nitrogen (C:N) Ratio: 20:1-60:1
 - ✓ Preferred 30:1-50:1
- Moisture: 40 to 65 percent
 - ✓ Preferred 50–60%
 - ✓ Like a damp sponge



ELEMENTS, CONT.

- Optimum pH range - 5.5 to 8
 - ✓ Preferred 6.5 – 8.0
- Temperature – 120° - 160°F.
 - ✓ *Process to Further Reduce Pathogens*
 - ✓ 131°F for 3-15 days (*f* of system)



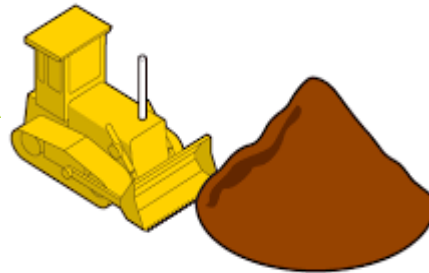
BASIC RECIPE

- **2-3 Parts Carbon - “Brown” materials**
 - Woody, dry materials- leaves, soiled paper, shredded paper, wood shavings, straw
 - Bulky materials, including branches should be chopped or shredded
- **1 Part Nitrogen - “Green” materials**
 - Green, wet materials, such as kitchen scraps, grass clippings, garden trimmings (no weeds), manures
- **Keep it small!**
 - ✓ Mowing, grinding, chipping, or shredding

**High Carbon
3 volumes**



**High Nitrogen
1 volume**



RECIPE, CONT.

- **A little soil, finished compost, or horse manure**
- **Moisture**
 - ✓ Just a little, like a damp sponge
 - ✓ Leave lid or cover off during rain
 - ✓ Required to keep compost microorganisms alive & active



TIPS

- ✓ Mix ingredients together to create a better balance— homogeneous mix
- Adding food scraps
 - ✓ No more than 20%
 - ✓ Balance C:N ratio, moisture, bulk density
- Observation, temperature, look & feel of compost, trial & error

AERATION TECHNIQUES

- Tumblers: Close lid & rotate
- Piles, bins: Lift materials with forklift
 - ✓ Move materials from outside to inside
 - ✓ Or, place materials on perforated pipes or pipe through middle



“HOT” COMPOST METHOD

- Enclosed containers
 - ✓ Insulate in winter
 - ✓ Use larger containers or tumblers
- Covered piles – insulate
- Proper “mix” of feedstocks



HOT COMPOST

- Temperature should rise to at least 120° F
 - ✓ 130°F for PFRP
 - ✓ Turn/rotate materials to achieve heat
 - 1-2 times per week, as needed



**BE ONE WITH
YOUR COMPOST**

TROUBLESHOOTING





MONITORING THE PROCESS

▪ *Observation*

- ✓ Are the bins or piles steaming?
- ✓ Are materials looking different
 - ✓ Is decomposition occurring
 - ✓ Materials slowing looking like soil?
 - ✓ Is the pile uniformly composting?
- ✓ Are strong odors present?



MONITORING THE PROCESS

- *Compost feel*

- ✓ Does the squeeze test indicate that there is moisture in the material
- ✓ Does it feel like a damp sponge & stick together?



MONITORING THE PROCESS

- *Oxygen*—Smell is the best measure of properly aerated composting
- Unpleasant odor – indicative of anaerobic conditions
 - ✓ Pile needs to be turned



MONITORING THE PROCESS

- *Temperature monitoring*
 - ✓ Is the temperature rising appropriately for rapid compost?
 - ✓ Does the temperature rise to 120°F
 - ✓ Maintain for PFRP (131°F...ideal)



QUALITY ASSURANCE

- Observe, monitor, sample, analyze, test
- *Keep accurate compost records*
 - ✓ Track feedstock sources & materials
 - ✓ Track turning frequency, temperature
 - ✓ Track compost phases (Active, Curing)
 - ✓ Odor issues & other problems
- Train the Team!



TIPS

- Have an adequate amount of carbon
- **Always** cover food scraps with carbon & soil
- Cover with lime or sawdust to deter fruit flies & vermin (rodents, bears)

TIPS

- Line bottoms of compost bins with wire mesh
 - ✓ To detour vermin
- Use vinegar to wash collection containers

IF CRITTERS BECOME AN ISSUE

- Strictly follow the “composting food scraps” tips & eliminate any meat
- Discontinue adding food scraps, especially in early spring
- Build an enclosure around the compost area

REGULATIONS



COMPOST CERTIFICATIONS

EXEMPT	SMALL (Registration Required)
Composting < 100cy/yr any feedstocks	Compost management area must be <4 acres (does not include finished compost storage areas or leachate/stormwater mgmt. areas)
Managing <3000 cy/yr leaf/yard/plant/wood & <20% is grass	Composting <5000 cy/yr feedstocks, Including not >2000 cy food residuals/food processing residuals. No animal mortalities, slaughterhouse waste, or offal.
Managing food residuals in a digester & <1% of design capacity is food	Compost <10,000 cy/yr of solely leaf, yard, & untreated wood residuals



WHO YOU GONNA CALL?

- VCGN
- CAV
- NERC
- Extension Master Composters
- Solid Waste Management Districts

QUESTIONS?

