



MMS

Mushroom Photography

Foray
Prime Time
Is
Upon
Us!!

Presented to
MMS member
meeting on
2015.08.10
by Howard Goltz



Cookeina colensoi

Agenda

MMS Mushroom Photography Photographic Equipment

- 1) Cameras
- 2) Accessories

Taking the Photo - 6 Steps

- 1) Compose Your Shot
- 2) Set ISO – Camera's Sensitivity to Light
- 3) Set Aperture – Depth of Field
- 4) Set Shutter Speed
- 5) Focus & Shoot
- 6) Edit

MMS & NAMA "Photo Contest Winners"

MMS Purpose:

“The Minnesota Mycological Society (MMS) is an educational organization for the study of mushrooms and other fungi. Members work with professional mycologists to improve their mushroom **identification** skills, build the mycological collection at the University of Minnesota, **educate** the public about fungi and assist the Hennepin County Poison Center in mushroom identification. “

“The Society’s interests include: Collecting and identifying wild mushrooms and other fungi, cooking with wild mushrooms, **photographing mushrooms** and arts and crafts with fungi.”

MMS Annual Photo Contest – Due End of October to Jessica Kohen

MMS Facebook Page

MMS Calendars

MMS Newsletter "The Toadstool Review"

MMS Website

MMS State Fair booth

NAMA photo contest - MMS photos equal to NAMA's

For identification and obtaining assistance from others

Document the date and location of your forays for future reference

MMS Mushroom Photography

MMS Annual Photo Contest Criteria – 1) Pictorial

Quality of the photo is the primary criterion, with particular attention given, but not limited to the following:

- **Overall composition**
- **Lighting, clarity, depth of field, etc.**
- **Aesthetic quality**
- **Artistic creativity**

A photo worthy of being on a calendar, greeting card or poster



Auricularia delicata

MMS Mushroom Photography

MMS Annual Photo Contest Criteria – 2) Scientific/Technical

Entries should provide as much photo information as possible to scientifically identify the fungus:

- Show key features for identification
- Show a typical example of the species
- May show various stages of development
- May be in the form of a single photo, multiple photos in a grouping, or as one entry in a collage
- Rare or unique species will receive extra consideration
- Should be of **sufficient quality to be included in a field guide**



Omphalotus olearius

MMS Mushroom Photography

MMS Annual Photo Contest Criteria – 3) Humor/Activity

Photo may depict any mycological event or associated activity, with special consideration given to MMS, NAMA or other mycological association-sponsored activities • Humorous entries or those showing “oddities” should be of special interest because of the photo content and text applied to the photo • **Quality** of the photo is important



“Fact – Even Mushrooms Wear Toupees!”

MMS Mushroom Photography

MMS Annual Photo Contest Criteria – 4) Other

A **high quality** photo that does not fit well in other categories, or depicts a unique size, shape, grouping or example of a unique mycological phenomenon.



Pink Fairy Land

MMS Mushroom Photography

Special considerations in mushroom photography:

Many mushrooms are relatively small

You need equipment that captures small

Details are important identifiers

Clarity and focus are critical (depth of field)

Mushrooms don't move

You can use slower exposure speeds and take your time

Many are low to the ground

You & your camera need to work comfortably at ground level

They are often in low light locations

Slower exposure speeds require "camera stabilization"

They create their own "shade" resulting in high contrast lighting

Lighting modifications can help

They are often in rugged and wet areas

Your equipment needs to be tough

Mushroom's environs often help with identification

Important in composing the photo

They often have other "stuff" around them that is distracting

Take time to modify the environs!

MMS Mushroom Photography

Types of **Digital** Cameras - similar - but different!

Phone digital camera



Compact / Pocket digital camera



Mid-Size, fixed lens digital camera
lenses not interchangeable, zoom



DSLR - Interchangeable lenses,
zoom or "Prime" (fixed focal length)

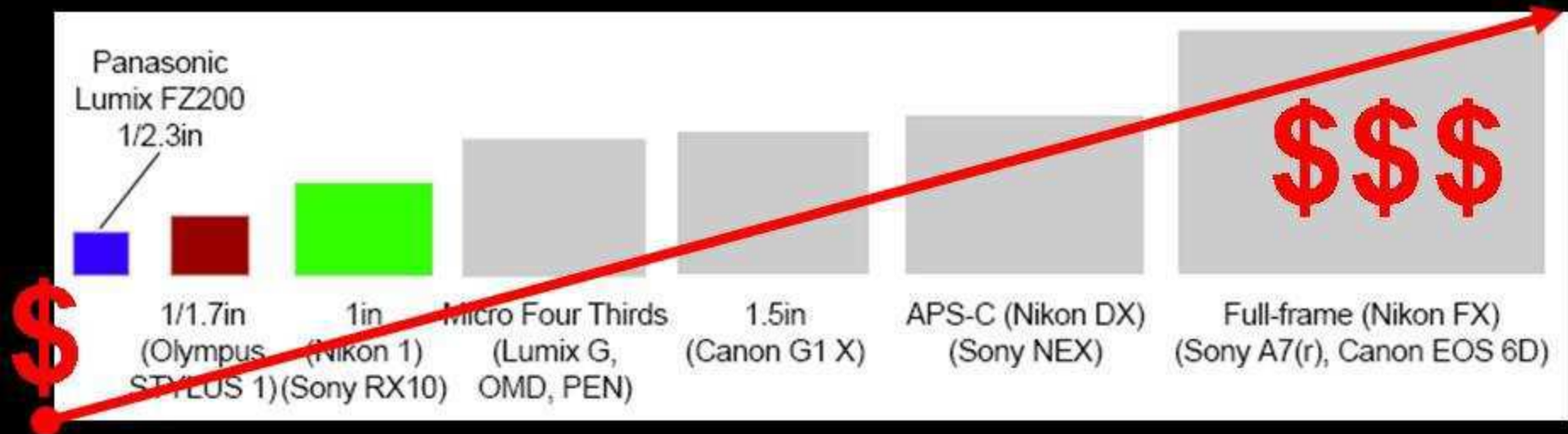


Photographic Equipment Camera

Types of **Digital** Cameras – similar - but different!

Sensor size – (digital sensor replaces “film”) the larger the size, the sharper the detail and image, but with higher costs and camera sizes

Recommend the largest size sensor within your budget:



Photographic Equipment **Camera**

Feature considerations:

1. **Recommend minimum of 5MP** - density of pixels relates to sensor size
2. Size of camera body: portability - weight, size
3. Water resistance & ruggedness
4. **Strongly recommend Manual exposure control** (ISO, Aperture & Speed)
5. Both manual and automatic Focus
6. **Highly recommend articulated viewfinder** – get low but not dirty!
7. Image stabilization / anti-vibration = gains one or two exposure stops
8. Other: Wi-Fi, GPS, hot shoe / pop-up flash, RAW/HD
9. Lenses

Focal Length: Wide Angle, Normal & Telephoto

Macro & Micro capability - including cell phones (\$20 attachments)

Prime lens (fixed focal length) = sharper image, less costly, usually gain a “stop,” but you move the camera in and out to fill the frame

Zoom lens (variable focal length) = image degrades, easier framing

Recommend using a prime 70 to 120mm lens with Macro feature



Photographic Equipment **Camera**

Accessories to improve your mushroom photos:

1. **Strongly recommend a Tripod, Mini-Tripod, or Bean Bags:** Mandatory for 1/30th of second exposure & slower. Shoot hand-held at 1/60th second+
2. **Groomers:** Small brush, knife, and tweezers for "grooming" mushroom
3. **Spare battery:** Nothing like a "dead camera" in the middle of a foray
4. **Gray card:** For correct exposure, more reliable than reviewing exposure in camera
5. **Spray bottle:** Water / especially for corals, slime molds & jellies
6. **UV filter:** Diffuses UV rays, cuts haze, scratch prevention
7. **Circular polarizer:** Reduces glare, enhances color saturation, contrast & detail
8. **Lens hoods:** Reduce "lens flare" - especially in direct sunlight



Photographic Equipment Accessories

Accessories to improve your mushroom photos:

Lighting modifiers: Natural Light (the sun) is the most reliable to reproduce natural color. Lighting levels change with moving clouds. On camera - pop-up or hot shoe = harsh, artificial appearance, sharp shadows, amplified with close-up shots.

Remote Flash / Off Camera - or continuous "on" feature, option to use with pop-up flash as a "fill flash" - use to light underside of the mushroom cap.

Ring LED light - on or off camera - more diffuse than spot source, even lighting, minimal shadowing (\$30-\$40 - up to \$100's by "Brand")

Reflector (cloth or paper)



Photographic Equipment Accessories

Esthetic Composition:

Angles are everything!

When I find a photo-worthy specimen, I study it before I even turn on my camera to get a sense of which angle would work best. I view it from all sides before deciding which is its "best side." In many cases one side of a specimen is damaged or discolored, while its opposite side remains pristine and "perfect." For beautiful pictorial photos!

I don't mind getting down and dirty, but it's a lot easier to use the flip screen viewer instead.



Omphalotus olearius

Taking the Photo - 6 Steps

Step 1) Compose your Shot

Esthetic Considerations

Groom your Fungi before shooting - remove distractions

Avoid conflicting/distracting edges and backgrounds - move or remove branches, leaves & grass

Sharpest focus on area of special interest / set against out of focus foreground and background, or darker or contrasting color background



Strobilomyces floccopus

Taking the Photo - 6 Steps

Step 1) Compose Your Shot

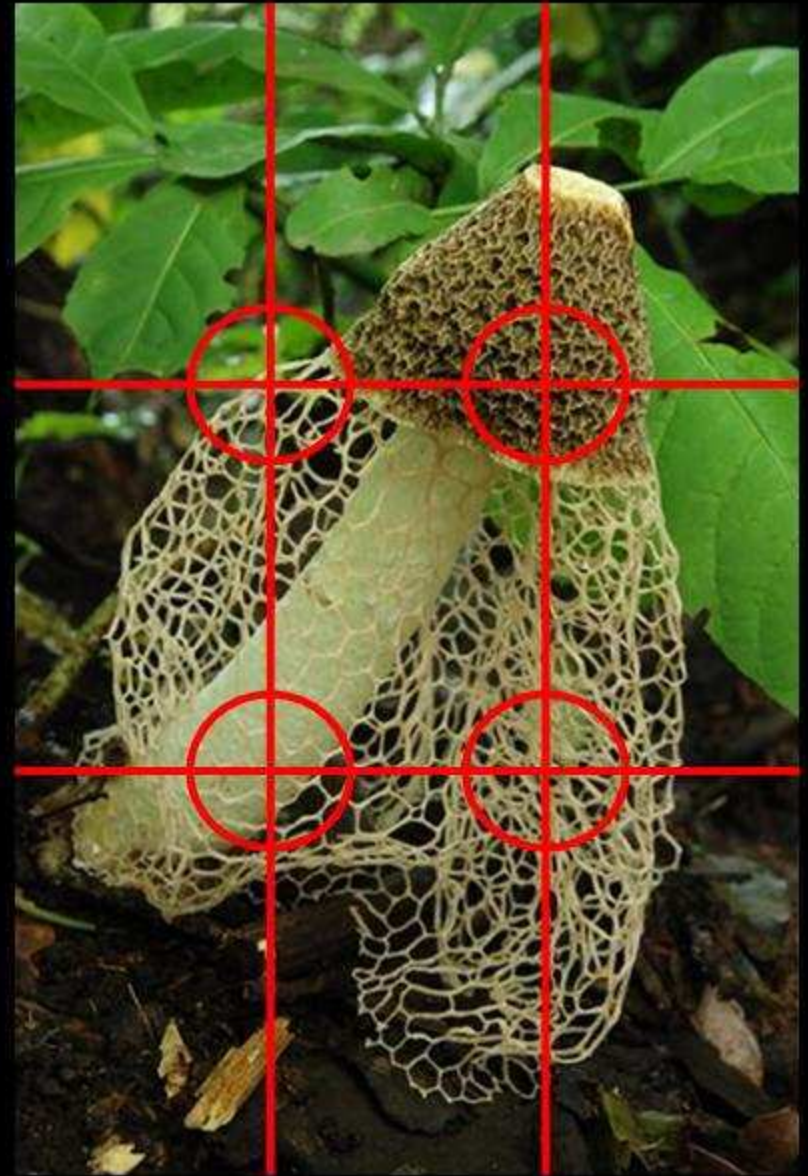
Esthetic Composition:

Rule of thirds - sweet spots for placement of highest interest

Odd subject numbers seem better than even

Visual movement through photo, perspective, lines, series of spots

Curves and textures add interest



Taking the Photo - 6 Steps

Step 1) Compose Your Shot

Esthetic Composition:

Get down low:

Perhaps the most effective way of entering the world of Mushrooms and drawing the viewer of your image into your shot is to get down low and shoot from ground level. This will enable you to see the textures, shapes and colors of not only the top dome of the mushroom but it's underside. It will also give your mushroom height which makes for a more dramatic and three dimensional shot.

Shooting up makes your mushrooms more important



Taking the Photo - 6 Steps

Step 1) Compose Your Shot

Esthetic Considerations:

Easily lose 1/3 of detail with too much contrast – Modify the light

Best lighting: Overcast / cloudy skies or entire subject in shade or shadow - use a friend or your body to put subject in shade. Low-contrast on subject matter = less loss of image in bright or dark areas

Use infill light for shaded areas



Cantharellus cibarius

Taking the Photo - 6 Steps

Step 1) Compose Your Shot

Esthetic Considerations:

Color adds interest: striking or unusual colors / white mushrooms on colored backgrounds to add interest (mosses)

Natural scale indicators & environs / leaves, grass, bugs, slugs, moss

Single specimen, group of specimens

Extreme close-ups, unique colors, details & textures

Perspective - how near (macro - up close) or far (telephoto) camera is from the subject changes the perspective & depth of field on the same image



Armillaria nabsnona

Strongly Recommend:
Lock in your composition
with a Tripod before setting
your exposure

Taking the Photo - 6 Steps

Step 1) Compose Your Shot

Setting your photo's exposure

Exposure level is measured in Stops of Light:

Doubling the amount of light is one stop brighter.

Halving the amount of light is one stop darker



ONLY 3 Exposure variables: Inter-related settings:

Each is required to be set in relation to the other for your desired exposure.

Step 2) ISO: Sets your camera sensor's sensitivity to light

Step 3) Shutter Speed: Sets the amount of time your camera allows light to pass through the lens to the sensor.

Step 4) Aperture: Sets the opening size around your lens. Determines how much light passes through the lens at any given time – and the sharpness of focus.

Each or all can be automatically or manually set, and together they determine the "Exposure Level."

Take multiple exposures & vary the variables!

Use "MANUAL" exposure when conditions allow!

Taking the Photo - 6 Steps

Steps 2, 3, & 4

ISO Controls “Graininess & Clarity”

Similar to “Film Speed”

You set it **in the Menu** of most digital camera's, even cell phones

Higher ISO = more sensitivity to light, allows faster shutter speeds, but with a loss of image quality (noise). Above ISO 400 the photo starts to get grainier.

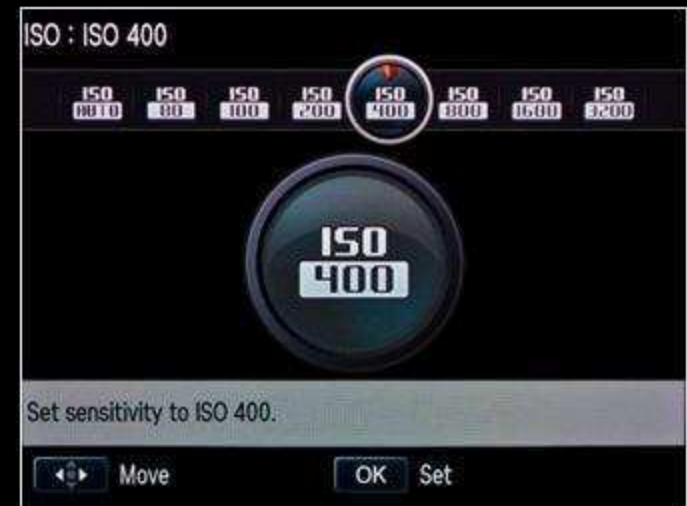
Lower ISO number = sharper photo & sharper pixelation

Doubling the ISO number is 1 stop brighter

Automatic mode: The camera makes the best choice it can for shutter speed, aperture and ISO settings

Recommendation: Manually set ISO from 100 to 400 for mushrooms

Taking the Photo - Step 2) Set ISO - Camera's Sensitivity



Aperture Stops = lens opening size



"f" Stop

Depth of field = range of sharpness front to back of subject

Rule of thirds - of the "depth" that is in focus, 1/3 is in front, 2/3 is behind the plane of sharpest focus

Choose the "depth" you want to be in focus:
Deepest = largest "f" stop number = smallest aperture / Shallowest = smallest "f" stop number = largest aperture

Same aperture on a telephoto has a greater depth of field than macro or normal lenses, the closer the lens to the subject, the shallower the depth of field. Use a Shallow Depth of Field to Isolate Your Fungi



Taking the Photo - Step 3) Set Aperture – Depth of Field

Shutter speed = The length of time your lens is open

Fungi are very still, so **with tripod**, remote shutter release cable or time-delayed release, and stabilization activated you can lengthen the shutter speeds almost as long as you'd like - allowing you to set the aperture to your desired depth of field.... and keep a lower ISO setting for best detail.

1/60th second, hand held = as slow as you can go, shoot faster shutter speed with longer lenses to avoid movement blur.



Taking the Photo - Step 4) Set Shutter Speed

Automatic dynamic focus -
camera selects **broad focus** area

Automatic **spot focus**
recommended - focus zones or
spots, movable

Manual focus – overrides when
your camera “balks”

Focus Lock - re-position camera

Depth of field - Aperture Rule of
1/3 for sharpest area

Regardless of focus, camera
movement blurs your photo –

Use a tripod!!



Taking the Photo - Step 5) Focus & Shoot

Get your picture as correct as possible within the camera

Download to your computer and use "Save As" for edits. Keep the original file "forever." Any time you decide to edit a photo for printing or sharing, either use a once-saved-as version or go back to the original file. (Your image software's online "Help" can explain these terms and instruct you on how to use them.)

Label "selected" images or files: **MMS Category**, Date, Location, Genus species

Projections and large photos best at 300 dpi at full size 8"x300dpi x 10"x300dpi = 7.2MP (cameras range from 5MP to 30+MP images) Note: PDF's saved from Powerpoint reduces image to 90dpi, and may wash out - darker images project better.

After your pictures are down-loaded to your computer: Avoid or Minimize Editing / Photoshopping - except for **cropping** and minor, obvious color/contrast corrections.

Taking the Photo – Step 6) Editing

Software:

Use whatever came with your camera and/or computer or free **basic software**:

e.g. Microsoft Office Picture Manager

- Primarily for **Cropping - experiment**
- Tweak brightness & contrast
- Re-Sizing (smaller sizes for emails and web posting)
- Color Balance - Amount, Hue, Saturation

Powerpoint - Labeling, graphics & combine multiple photos into one – degrades image quality from “original photo file”

Photoshop - More features & costly, RAW image adjustments, lots of memory required and loss of speed

Taking the Photo - Step 6) Edit



RE-CAP

MMS Mushroom Photography

Education, Identification, Publication, Contest!

Photographic Equipment

1) Cameras – They all work, with differences

2) Accessories

Mini-Tri-Pod

In-Fill Lighting

Taking the Photo - 6 Steps

1) Compose Your Shot

Take your time

Shoot in Manual Mode

2) Set ISO – Camera's Sensitivity to Light

3) Set Aperture – Depth of Field

4) Set Shutter Speed

5) Focus & Shoot

6) Edit



MMS

**Mushroom Photography
Practice, Experiment &
Have Fun!**

Questions?



MMS "Photo Contest Winner"

Trametes versicolor



MMS "Photo Contest Winner"

Flammulina velutipes



Pholiota squarrosa

MMS "Photo Contest Winner"



Clitocybe clavipes

MMS "Photo Contest Winner"



Cyathus striatus

MMS "Photo Contest Winner"



MMS "Photo Contest Winner"

Supper



Hygrocybe appalachiensis

NAMA "Photo Contest Winner"

Boletus bicolor



NAMA
"Photo Contest
Winner"

Cordyceps on *Blattaria* Cockroach



NAMA "Photo Contest Winner"



Xeramphalinoid with ghost primordia

NAMA "Photo Contest Winner"

Strobilomyces floccopus



NAMA
"Photo Contest Winner"

The3Foragers



NAMA "Photo Contest Winner"

Crepidotus cinnabarinus



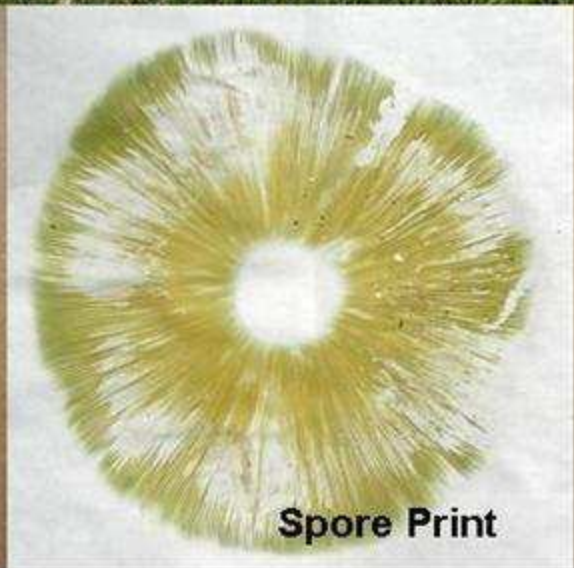
Agaricus praeclaresquamosus

NAMA "Photo Contest Winner"



NAMA "Photo Contest Winner"

Leotia viscosa



Chlorophyllum molybdites (Green-Spored Lepiota)

MMS "Photo Contest Winner"



Phallus rubicundus

MMS "Photo Contest Winner"

Xeromphalina campanella



MMS "Photo Contest Winner"



Boletus mirabilis

MMS "Photo Contest Winner"

Laetiporus sulphureus (Sulphur Shelf / Chicken Mushroom)



MMS "Photo Contest Winner"

Volvariella bombycina



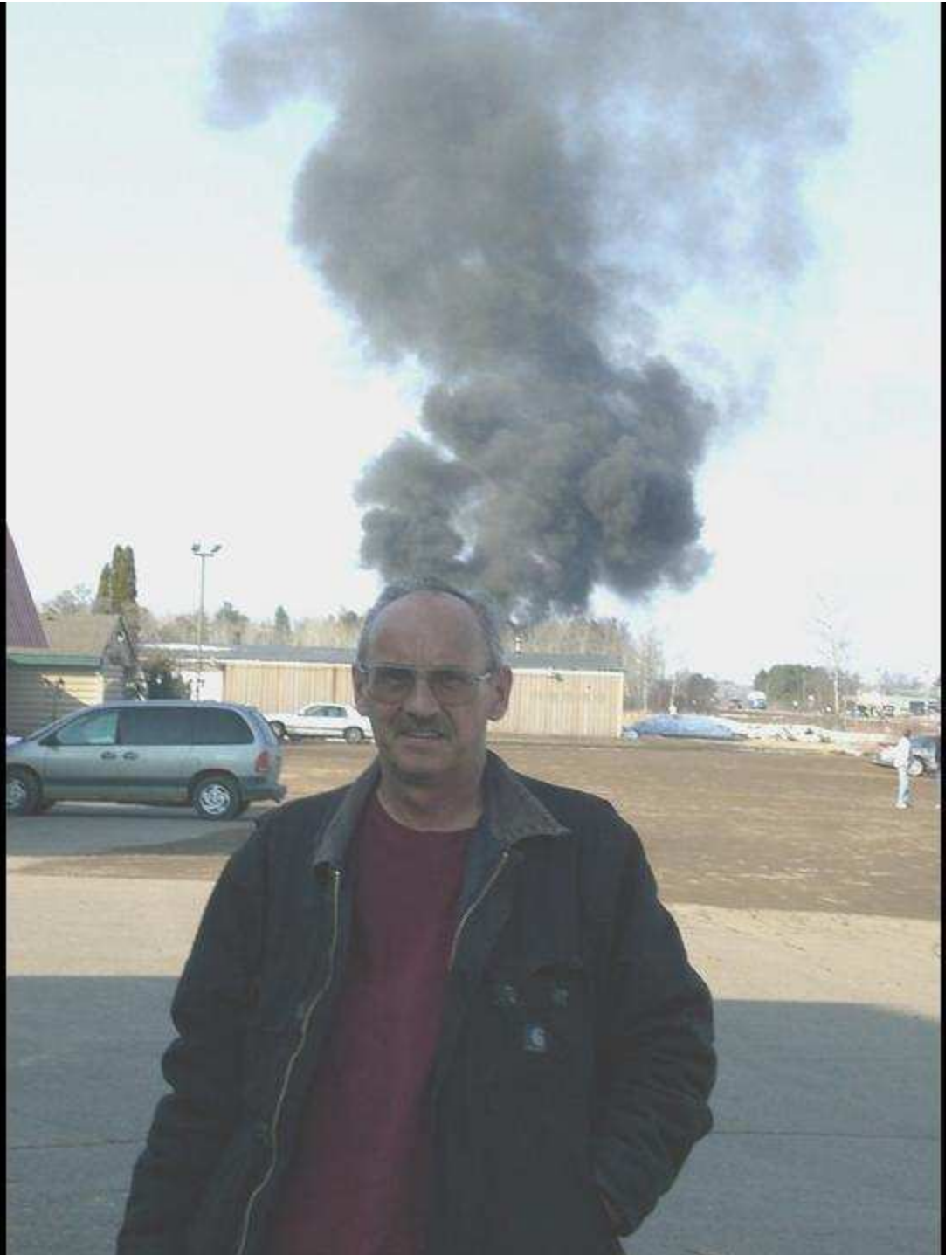
MMS
"Photo Contest Winner"



MMS

"Photo Contest Winner"

Stereum ostrea



Lee letting off steam
Chaga foray 2010

**MMS "Photo Contest
Winner"**