John Mascaro, Turf-Tec International

History of Aerification
The "Hole" Story

66th Annual Southeastern

TURFGRASS CONFERENCE

66th ANNUAL

April 24, 2012

UGA TIFTON CAMPUS CONFERENCE CENTER
AT THE RURAL DEVELOPMENT CENTER
TIFTON, GEORGIA

SPONSORED BY:
The University of Georgia Coastal Plain Experiment Station
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USDA, Agricultural Research Service
United States Golf Association Green Section
Georgia Golf Course Superintendents Association
Georgia Turfgrass Association
The University of Georgia Cooperative Extension Service

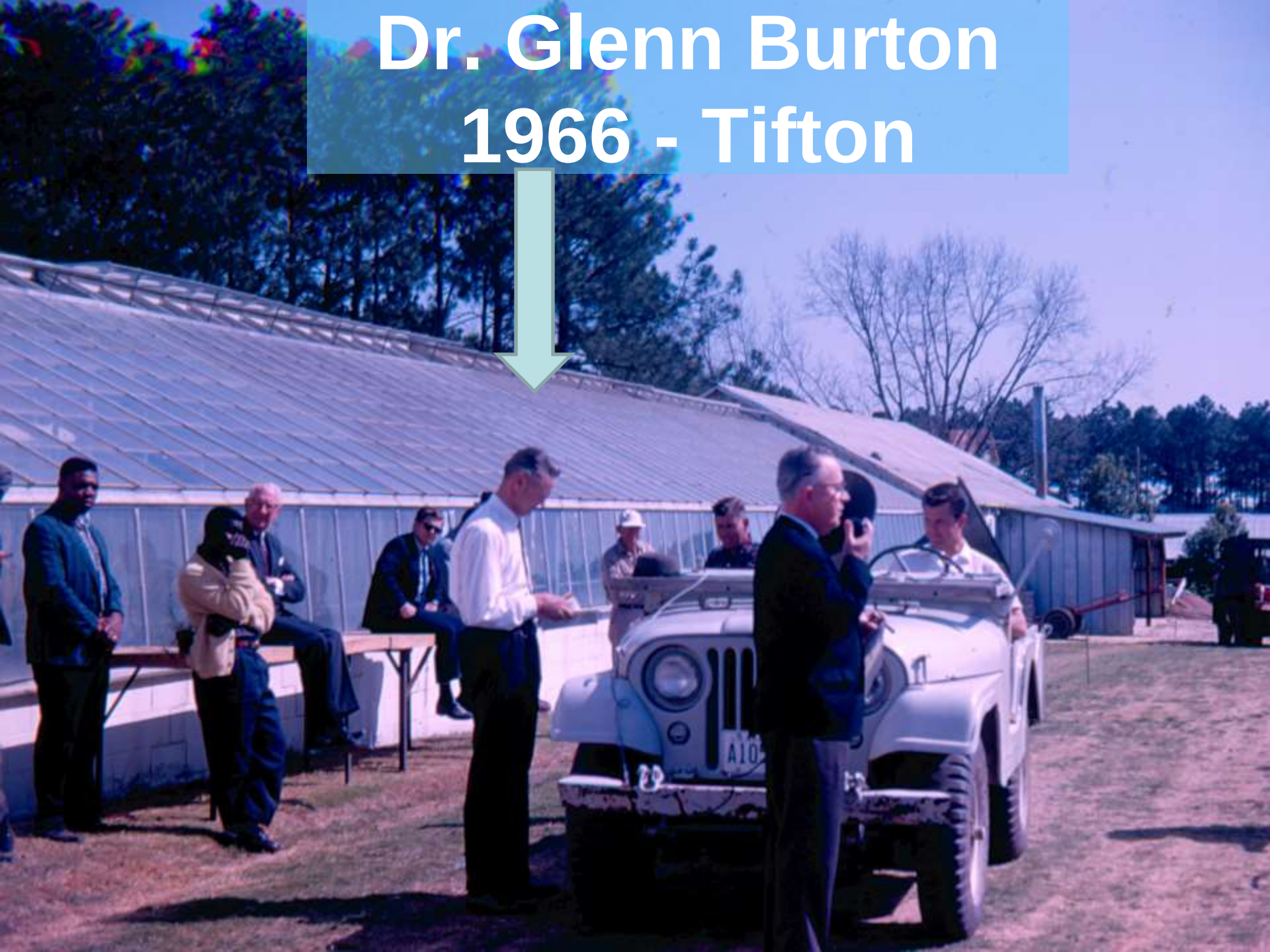
66th Annual SE Conference

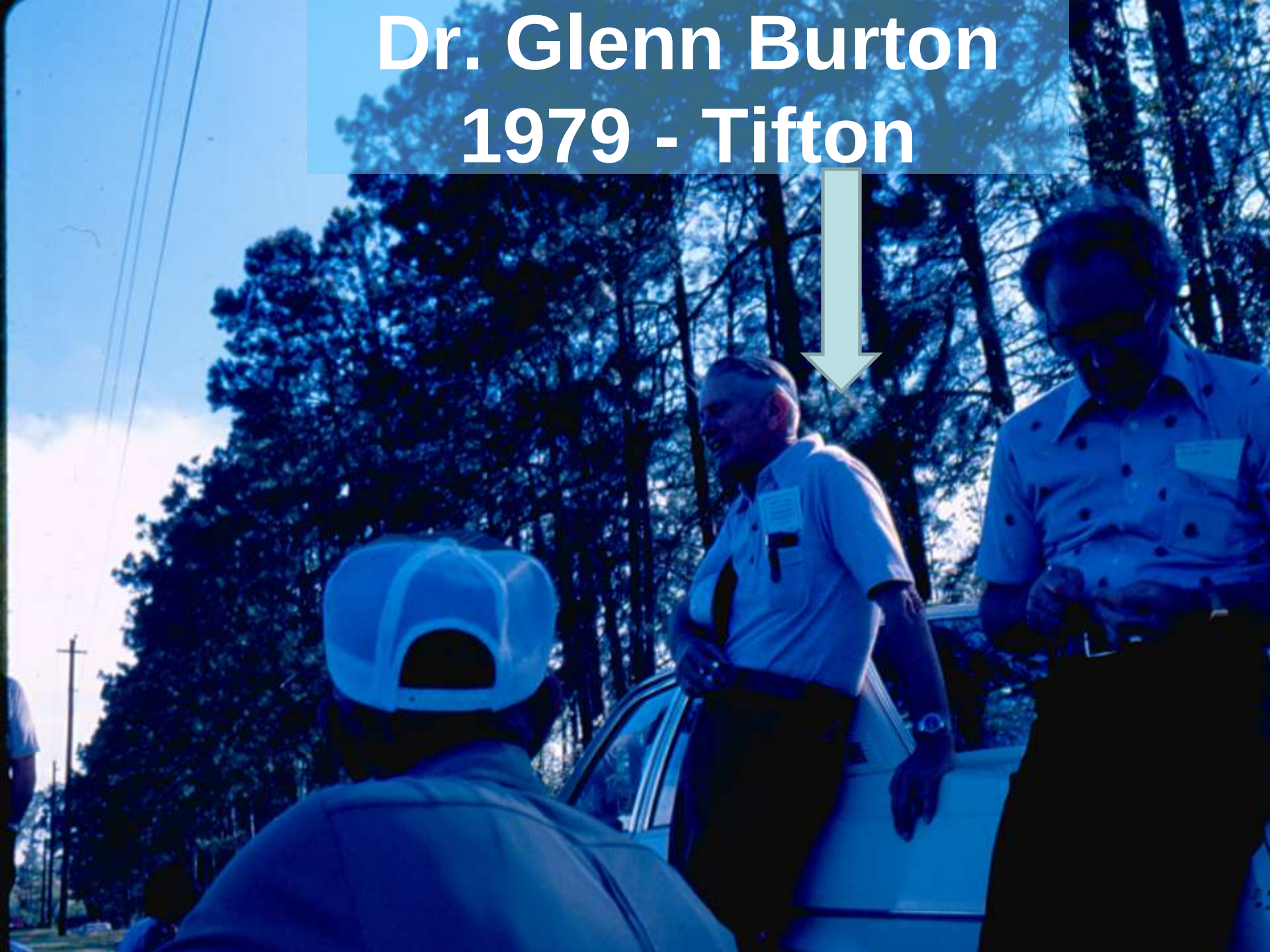
By: John Mascaro

2nd Annual SE Conference – Tifton Field Day
My fathers first turfgrass trade show 1946 - Tifton

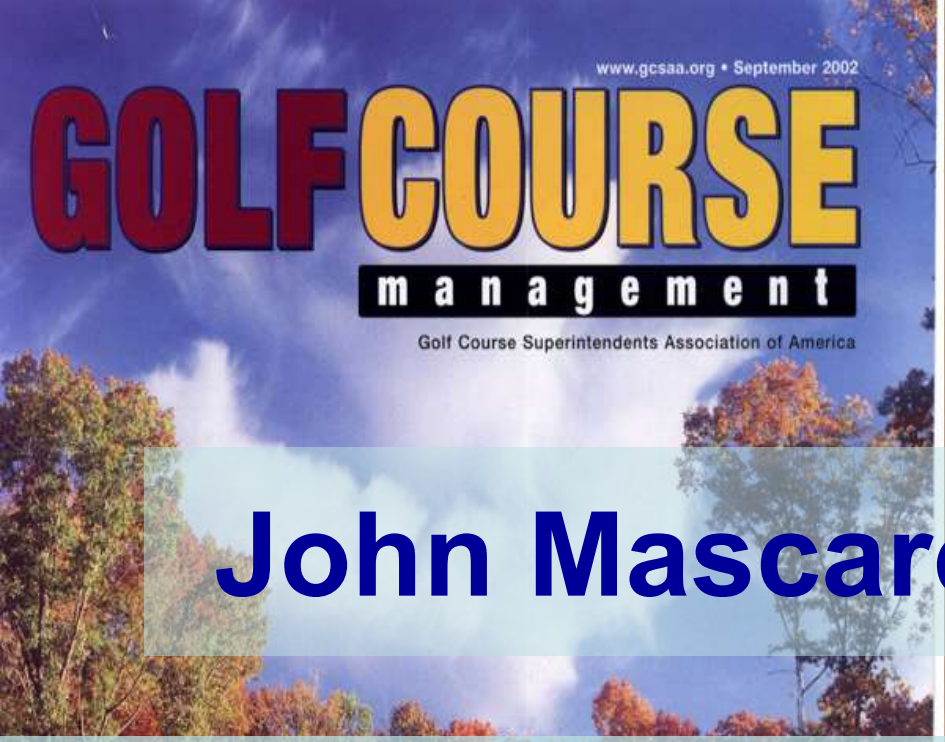
Tifton 1951 – West Point Products Equipment Display

Dr. Glenn Burton
1966 - Tifton




Dr. Glenn Burton
1979 - Tifton


Tifton 1987
Turf-Tec International Display
My first trade show!!



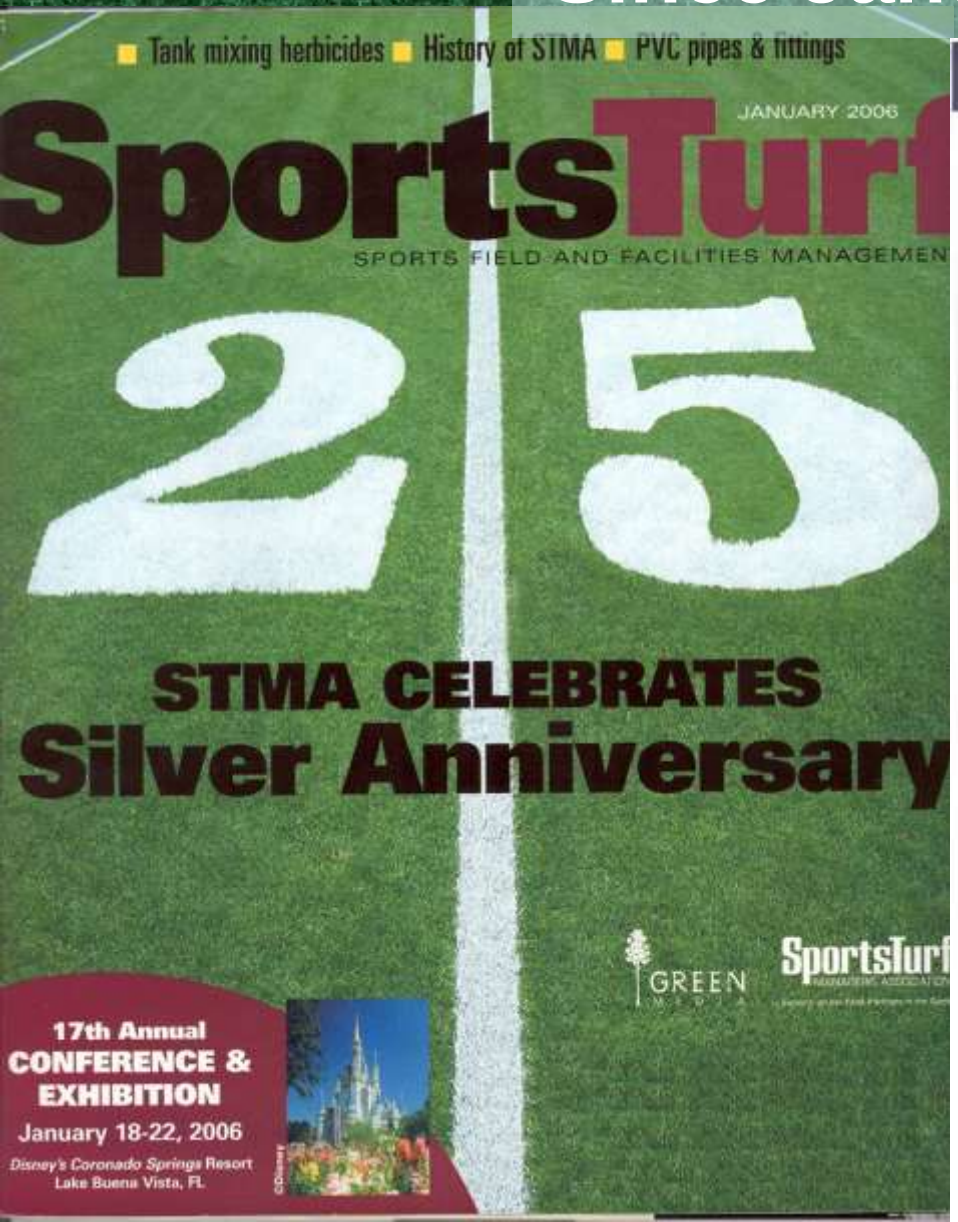
John Mascaro's Photo Quiz

Comes Alive!

Since September, 2002

John Mascaro's Photo Quiz

Since January 2006



John Mascaro's Photo Quiz

SportsTurf is proud to introduce a new feature, "John Mascaro's Photo Quiz." The history of this interactive feature dates back more than 44 years to John's father. The late Thomas Mascaro was an inventor, entrepreneur, and educator with a strong interest in turfgrass problems. He invented the Aerifier in 1946 and the Verti-Cut in 1955 as well as many other products for the turfgrass industry. He traveled extensively and took at least 100,000 turf-related photos. For 21 years, beginning in 1961, Tom Mascaro used his slide collection to write a monthly column for *Golf Course Management* magazine and its predecessors, *The Golf Course Reporter* and *The Golf Superintendent*.

Beginning in September 2003, John Mascaro, president of Turf-Tec International, revived this fun and informative feature in *Golf Course Management*. Starting in this issue, we will publish a sports turf version of "Photo Quiz." It will contain a photo of a problem that can occur on athletic field and some clues that will allow the reader to try to figure out what caused the problem. The answer will appear on another page in the magazine.

This quiz will be interactive by also allowing our readers to submit photographs for consideration for future installments of the Photo Quiz. If selected, the photo submitter will receive full credit in the magazine. All photos submitted will become property of SportsTurf and the Sports Turf Managers Association. We hope you enjoy this new feature. ■

Can you identify this sports turf problem?

Problem: Green circles
Turfgrass Area: Sports field
Location: Hawaii
Grass Variety: Kikuyugrass Grass

Answer to John Mascaro's Photo Quiz on Page 56

John Mascaro is President of Turf-Tec International

Fox holes

Photo courtesy of Ryan Bourne, GCS from Terradyne Country Club in Andover, Kansas

GCM Issue: Jan 2011

Answer: Wild pigs looking for earthworms...

Photo Courtesy: Mike McCullough,
Northern California Golf Association. Brad Langley, Supt.
San Juan Oaks GC, San Juan Bautista, CA

GCM

Issue: July 2003

Wild pigs tearing up tee complexes

Photo Courtesy Bill Keller, Supt - Bolder Creek GC, Colorado

Backpack blower - Loose gas cap

Steven Chernosky, Golf Course Superintendent at The Deerwood Club in Kingwood, TX..

GCM

Sept 2009

Sandhill Cranes

Mark Jarrell, CGCS, Superintendent. Palm Beach National Golf & Country Club, Lake Worth, FL

GCM

Dec 2007

Sandhill Crane damage

Mark Jarrell, CGCS, Superintendent. Palm Beach National Golf & Country Club, Lake Worth, FL

GCM

Dec 2007

- Issue: December 2002
- Turfgrass Area: Golf Green
- Location: Southeastern United States
- Problem: Green had consistently thin grass and poor infiltration.

Answer: Layering.

A tale of two greens

Infiltration rate of 2 inches per hour


2 Inches per hour


24 Inches per
hour

Infiltration rate of 24 inches per hour


24 inches
per hour

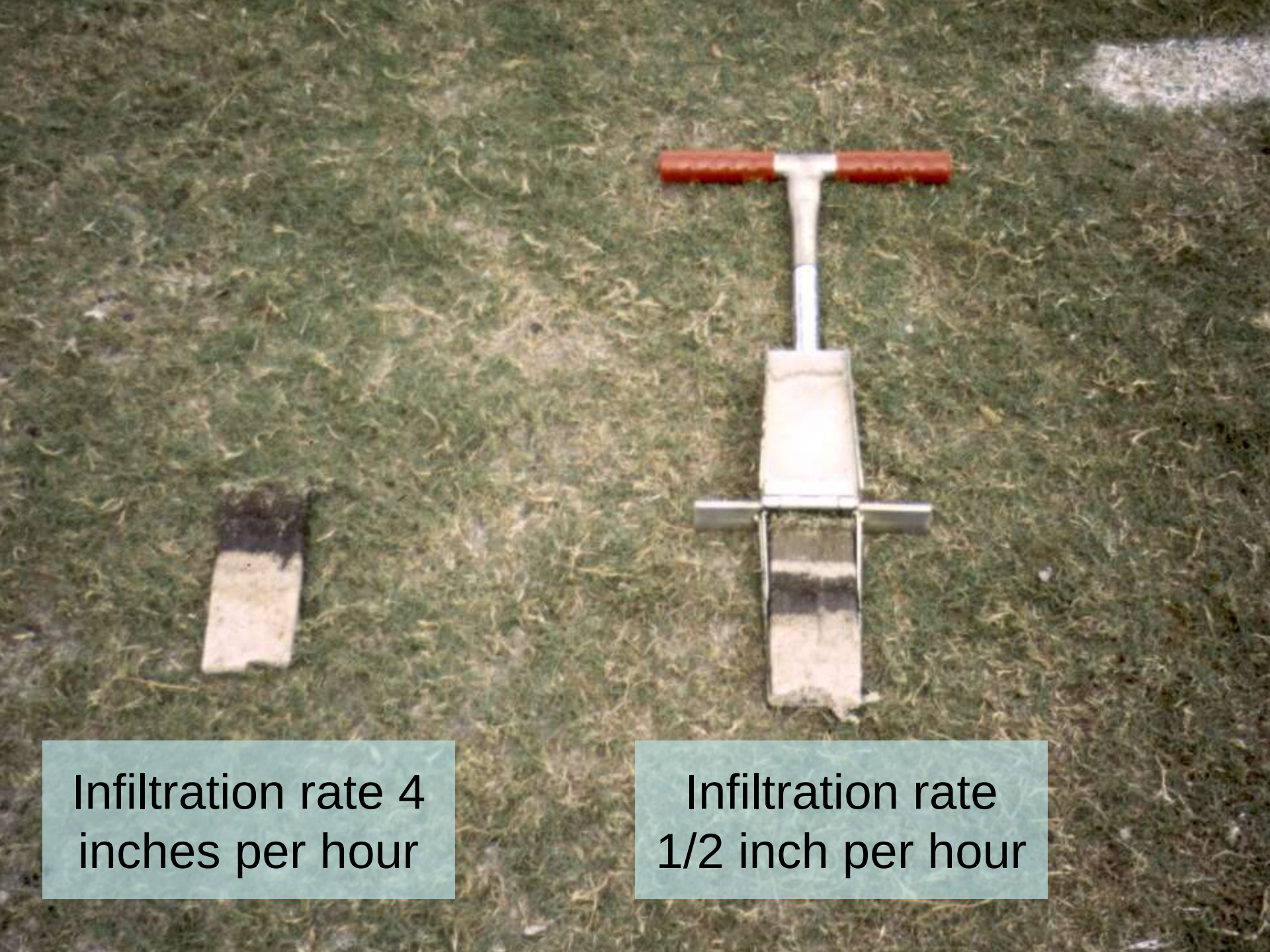
2” per Hour

24” per Hour

A tale of one field

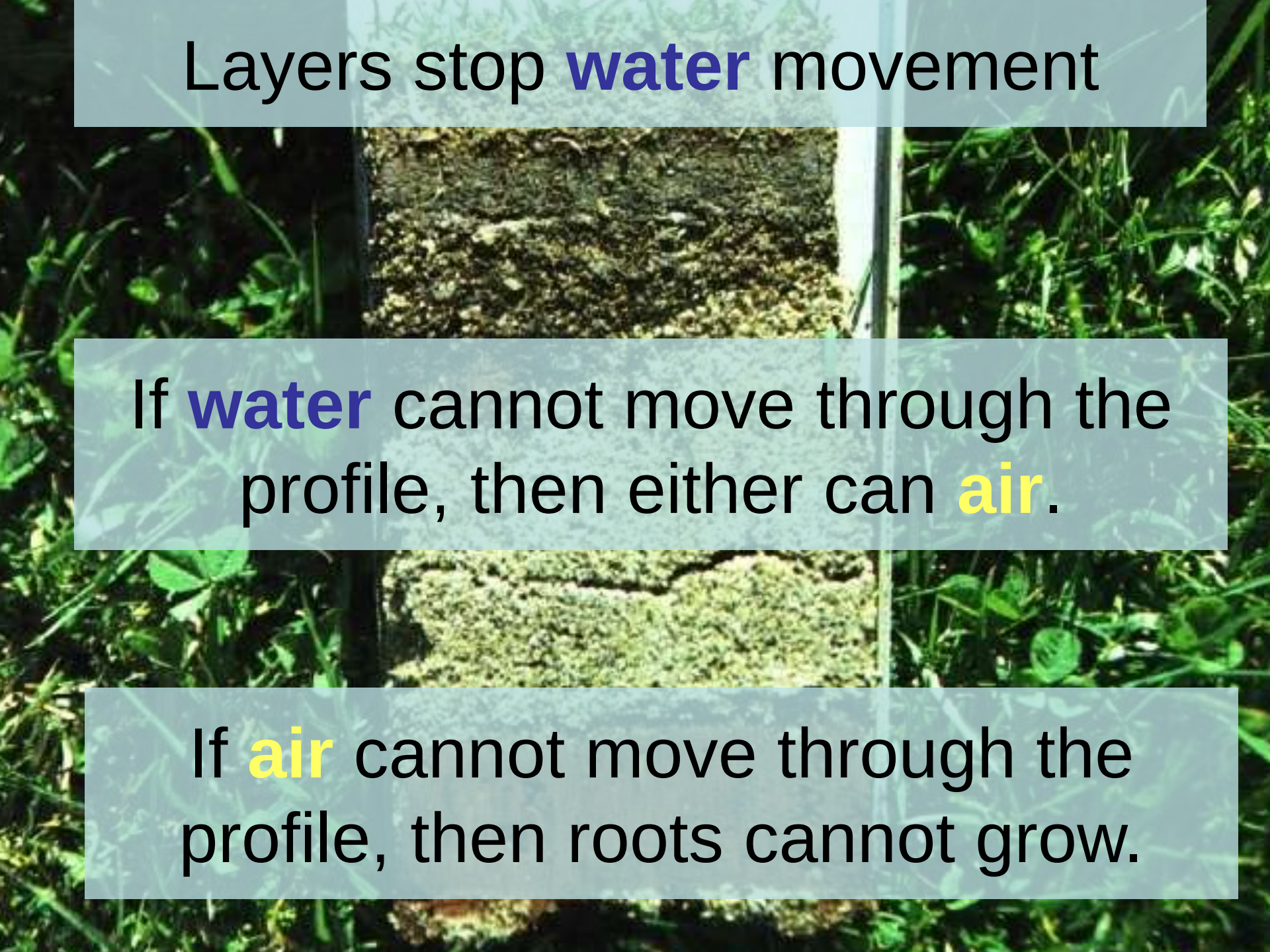
4 year old field

Rebuilt center


Infiltration rate 4 inches per hour
Infiltration rate 1/2 inch per hour


Infiltration
rate 70 inches
per hour


Layers cause problems!!!



Layers stop **water** movement

If **water** cannot move through the profile, then either can **air**.

If **air** cannot move through the profile, then roots cannot grow.

Why do layers cause problems?


100% Saturated


100% Saturated


100% Saturated
100% Saturated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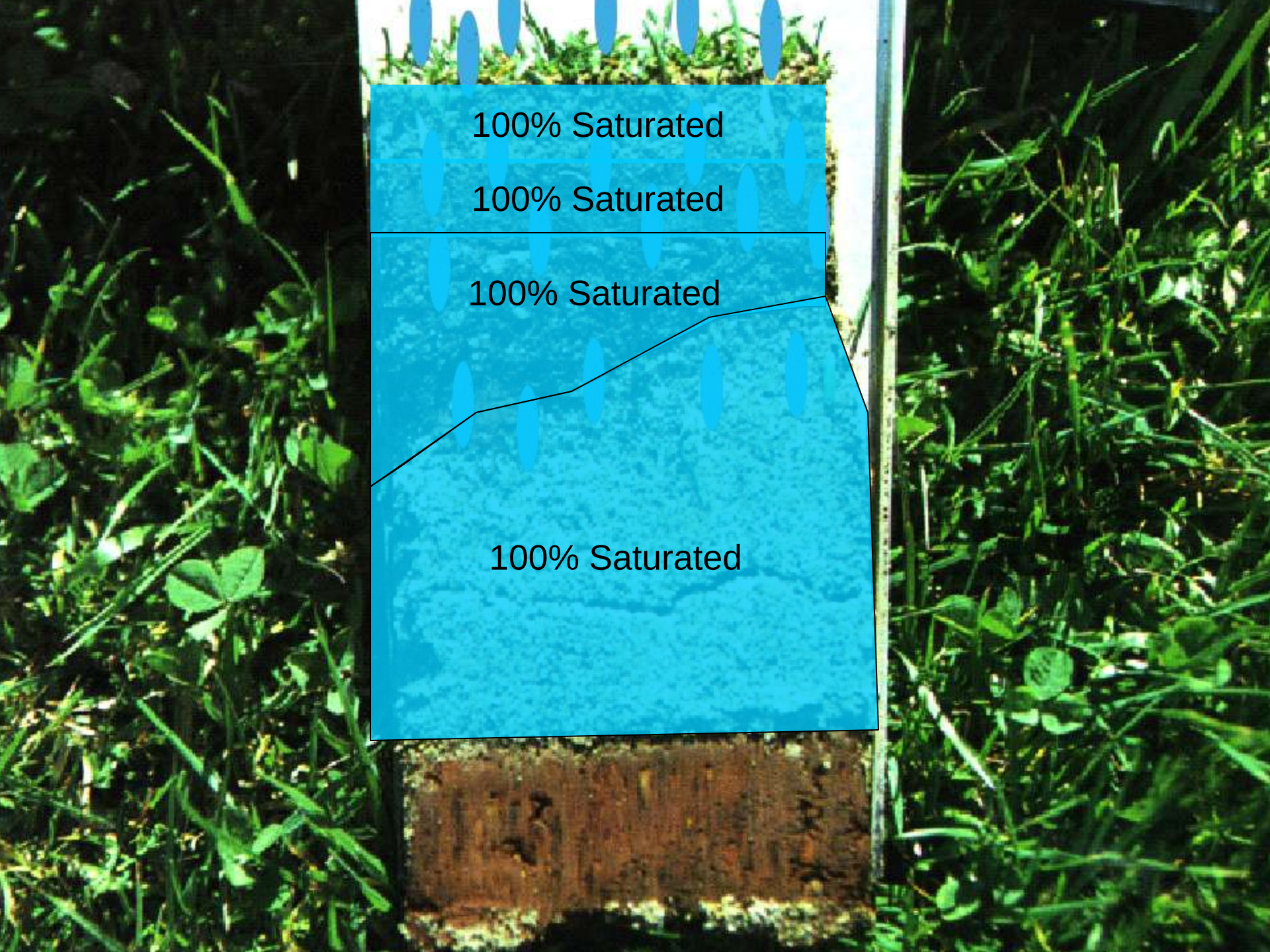
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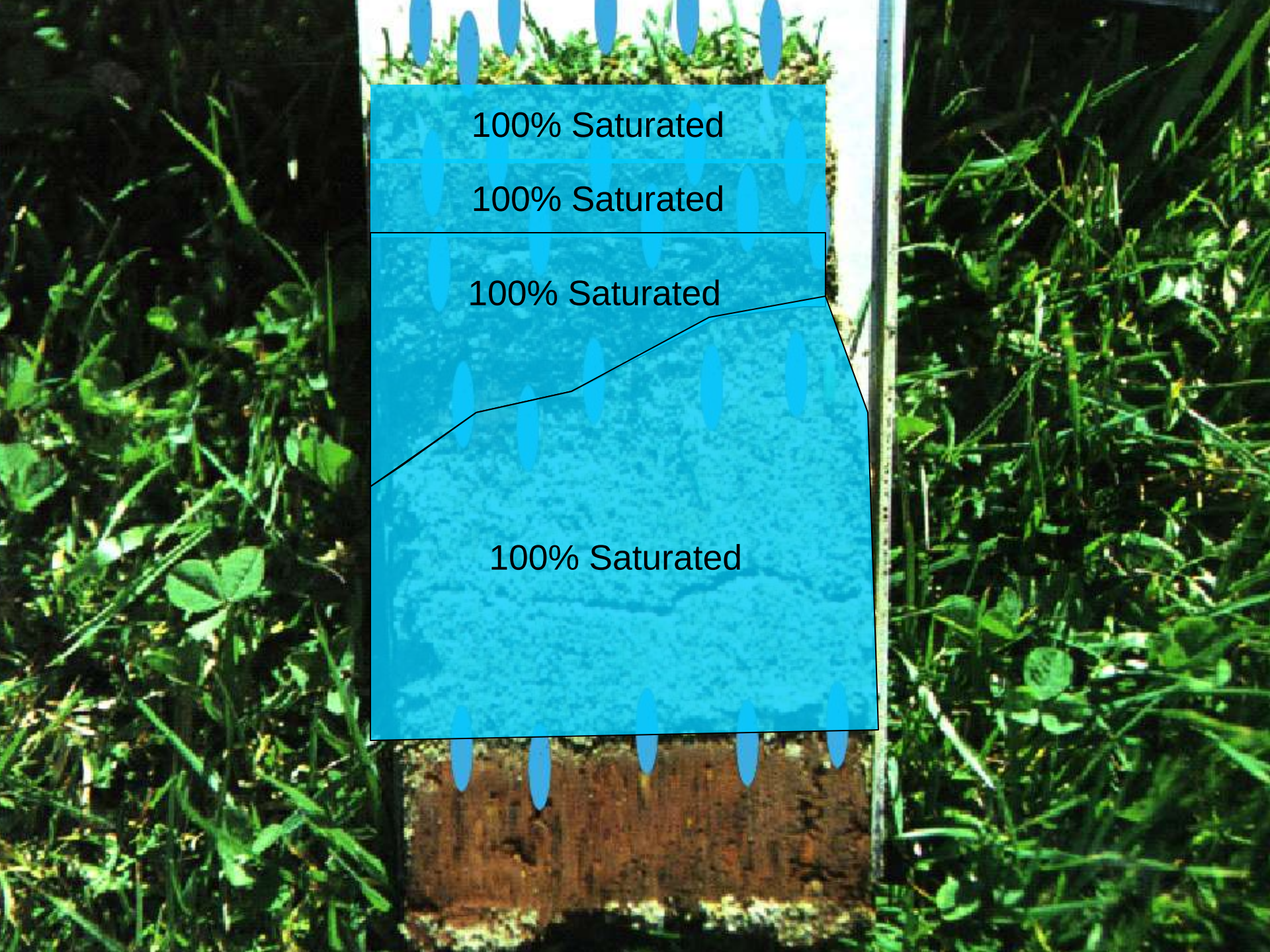
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How else do you eliminate layers in the soil?

Aerification

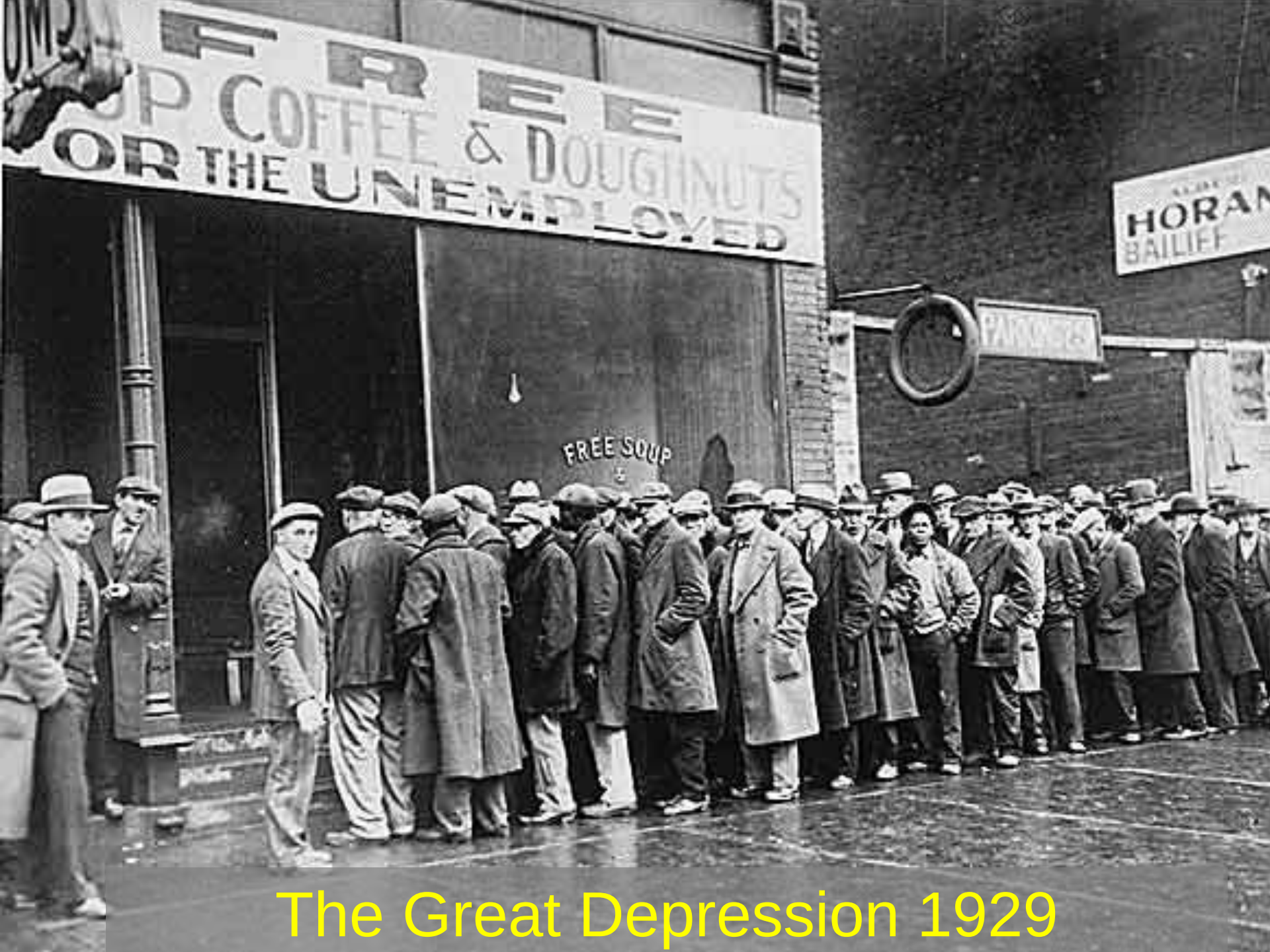
What is Aerification?

Tom Mascaro

Tony Mascaro

Started West Point Products in 1932 to sell topdressing to Golf Courses.

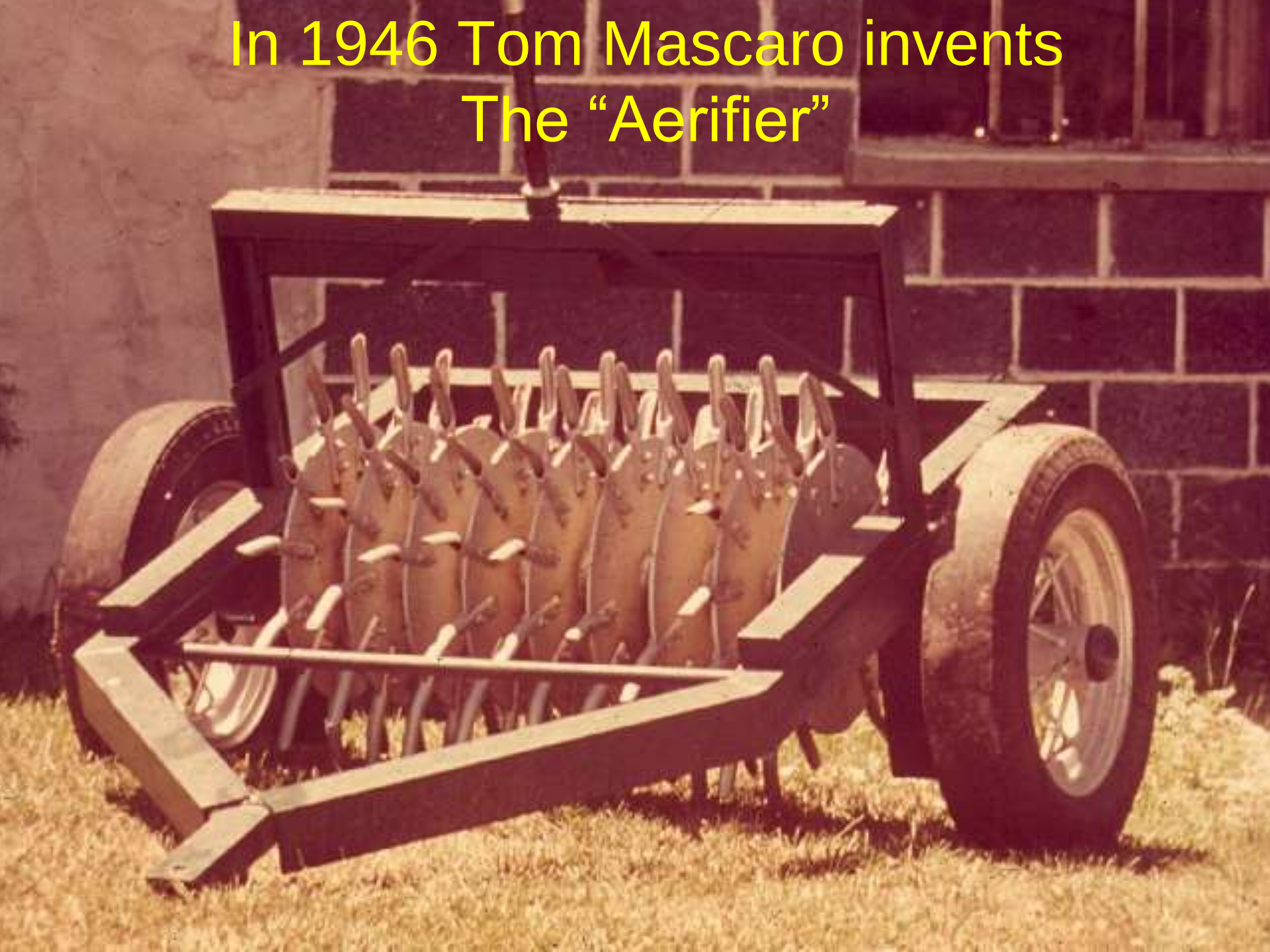
Mushroom Industry in Kennett Square, PA.



The Great Depression 1929

Dr. Fred Grau, Agronomist USDA

In 1946 Tom Mascaro invents The “Aerifier”



2-371

NO. 415687

The United States of America

To All To Whom These PRESENTS Shall Come:

This is to Certify That by the records of the UNITED STATES PATENT OFFICE it appears that WEST POINT LAWN PRODUCTS,

of

West Point, Pennsylvania,

did, on the 13th day of February, 1945, duly file in said Office an application for REGISTRATION of a certain

TRADE-MARK

shown in the drawing for the goods specified in the statement, copies of which drawing and statement are hereto annexed, and duly complied with the requirements of the law in such case made and provided, and with the regulations prescribed by the COMMISSIONER OF PATENTS.

And, upon due examination, it appearing that the said applicant s are entitled to have said TRADE-MARK registered under the law, the said TRADE-MARK has been duly REGISTERED this day in the UNITED STATES PATENT OFFICE, to

West Point Lawn Products, their successors or assigns.

This certificate shall remain in force for TWENTY YEARS, unless sooner ated by law.

In Testimony Whereof I have hereunto set my hand and caused the seal of the PATENT OFFICE to be affixed, at the city of Washington, this fourteenth day of August, in the year of our Lord one thousand nine hundred and forty-five, and of the independence of the United States the one hundred and seventieth.

Casper W. Ooms

Commissioner of Patents.

ATTEST:

Law Examiner.

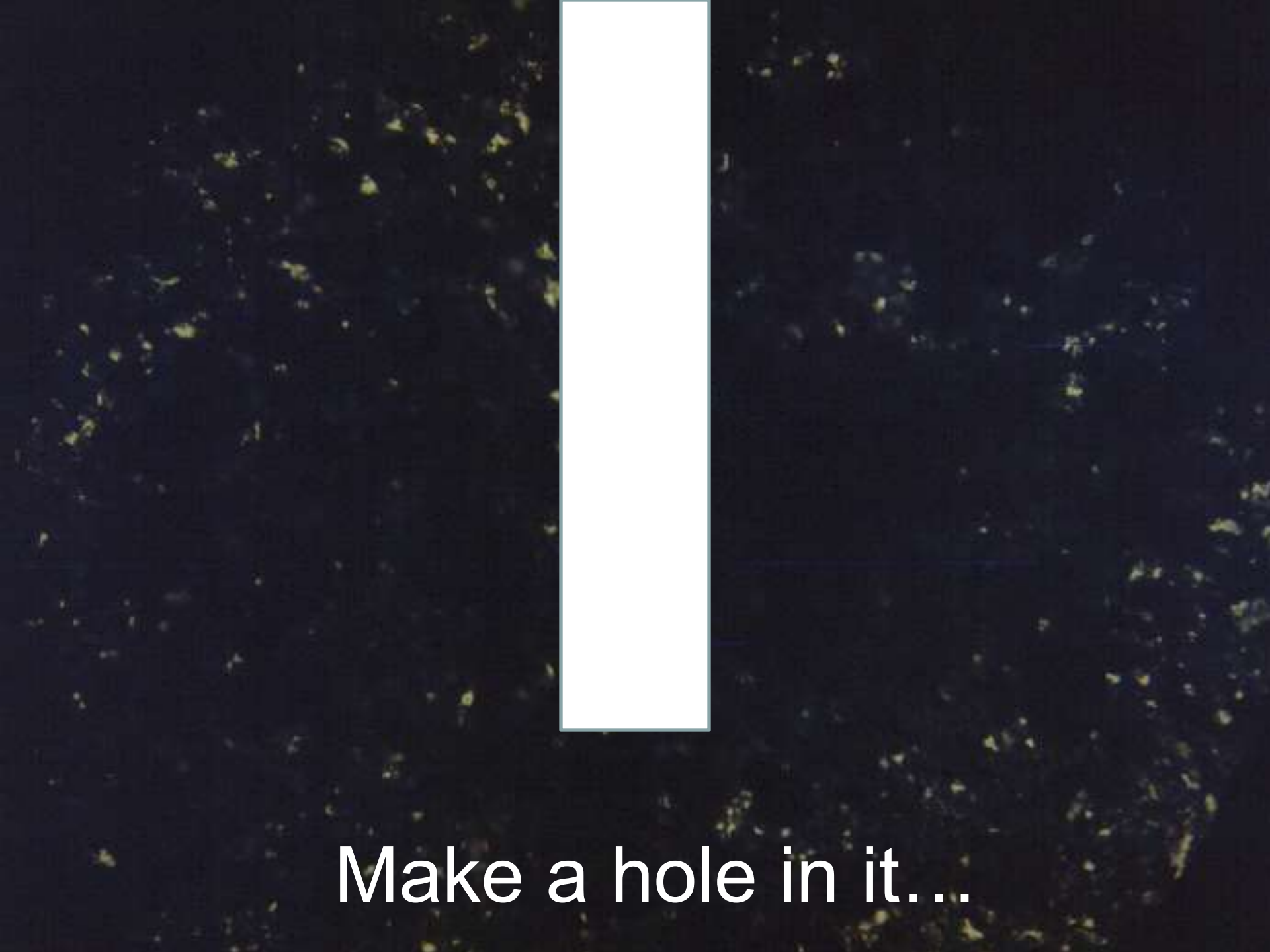
1945 The name “Aerifier” was trademarked and subsequently, the machine was also patented.

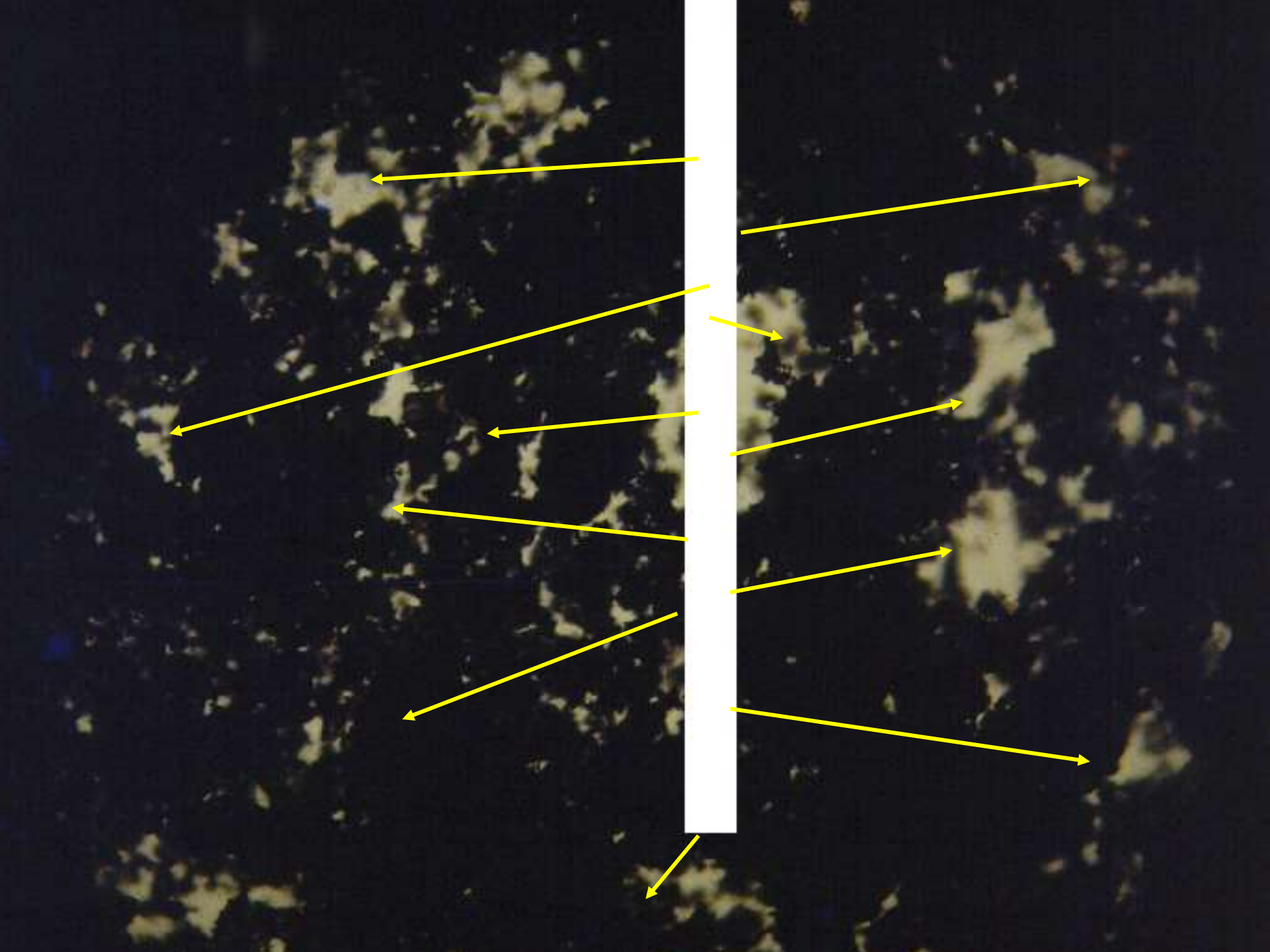

Aerification not only increases air space in the soil and improves *infiltration!*

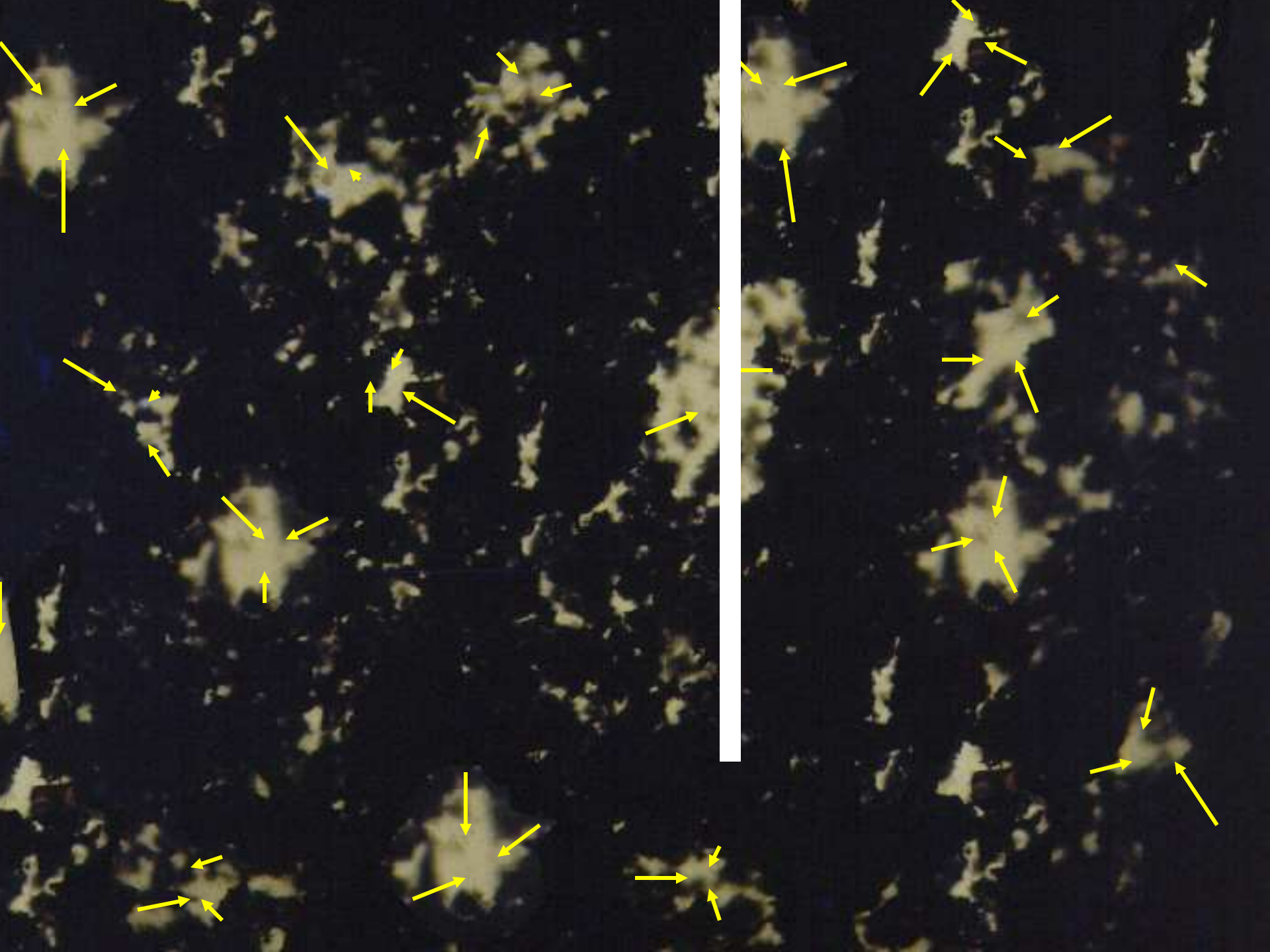
Stuffing holes with sand!

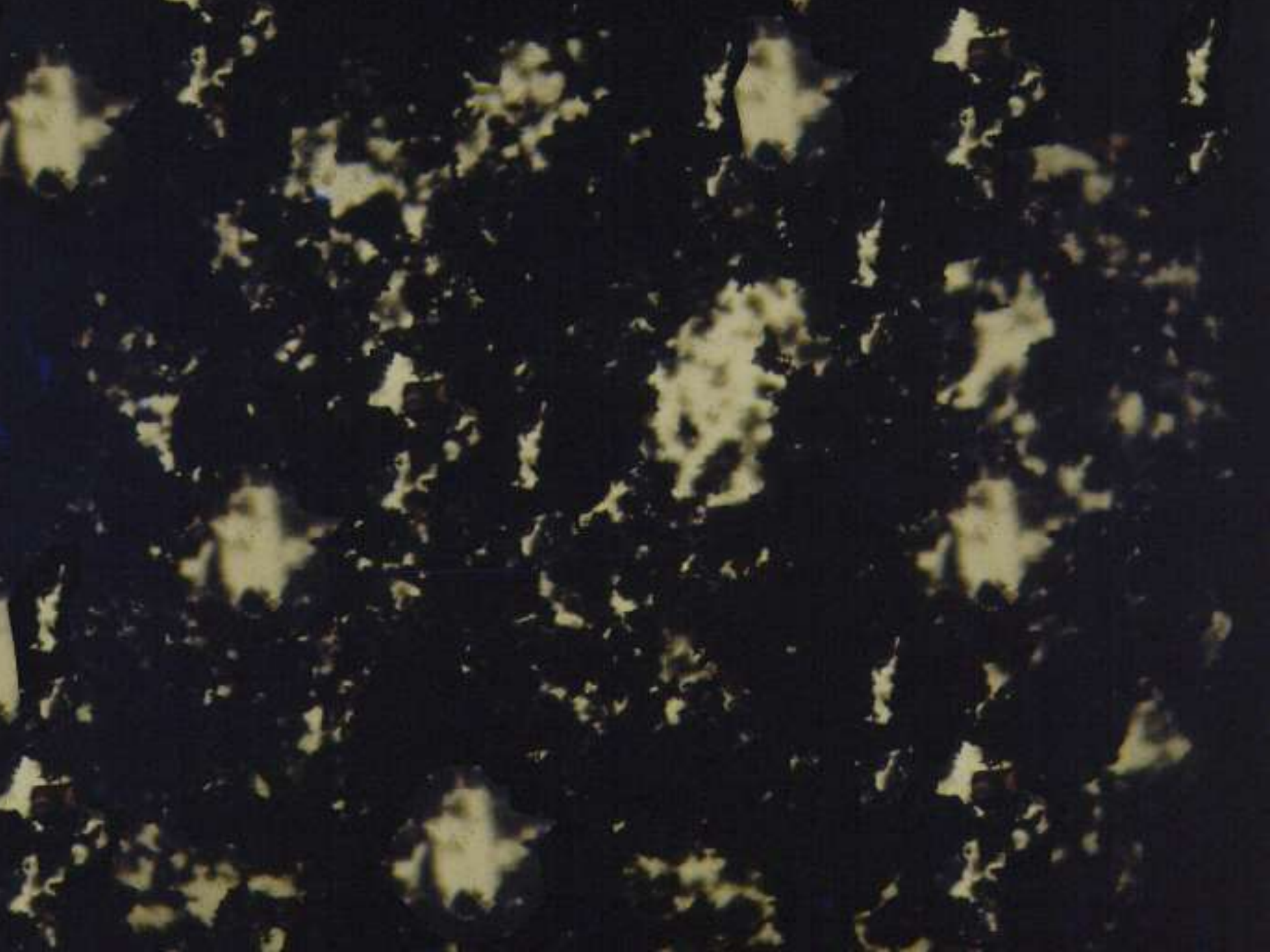
Not Aerification!!


When you Aerify, you remove the soil core.

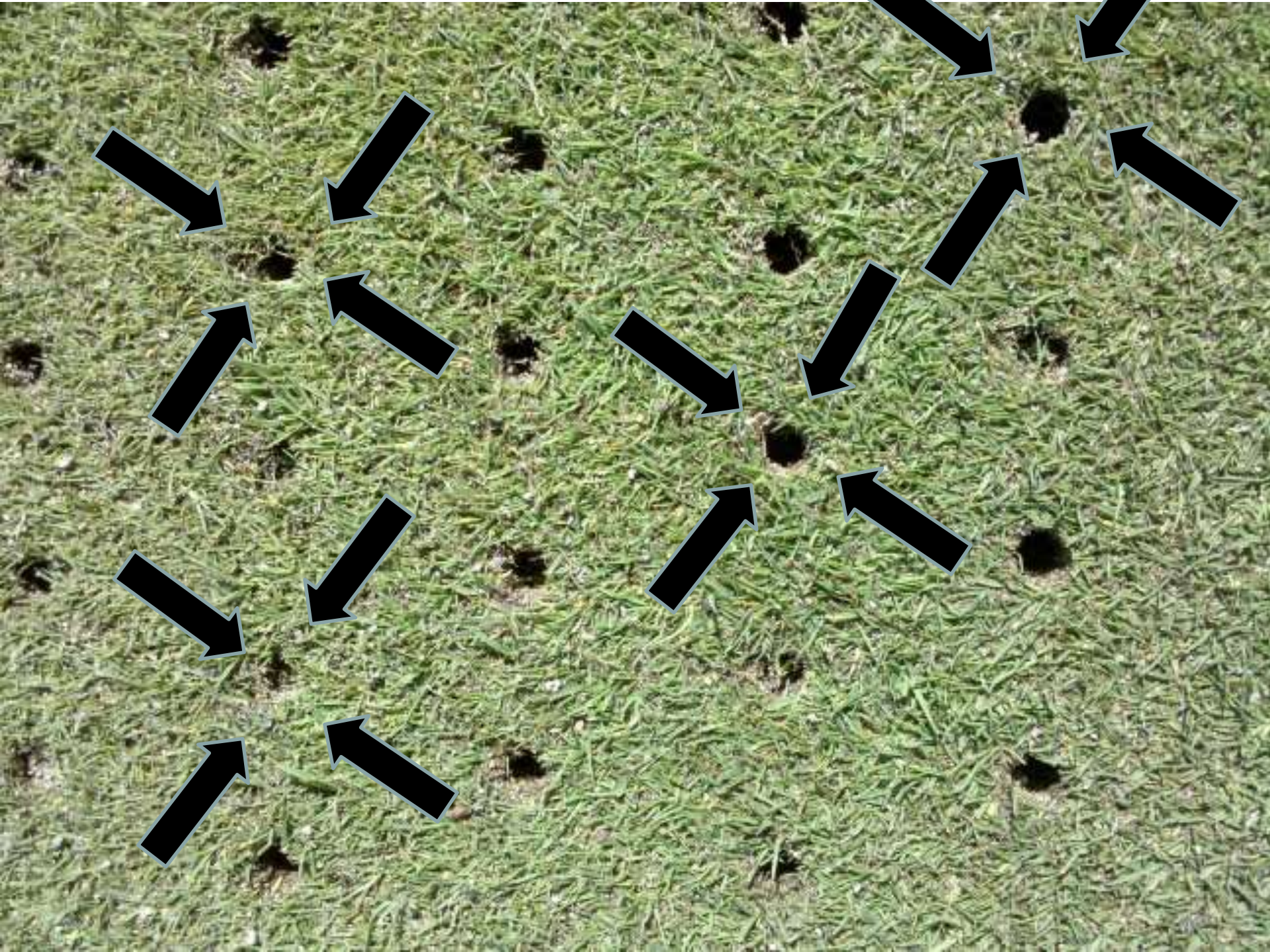

Make a hole in it…

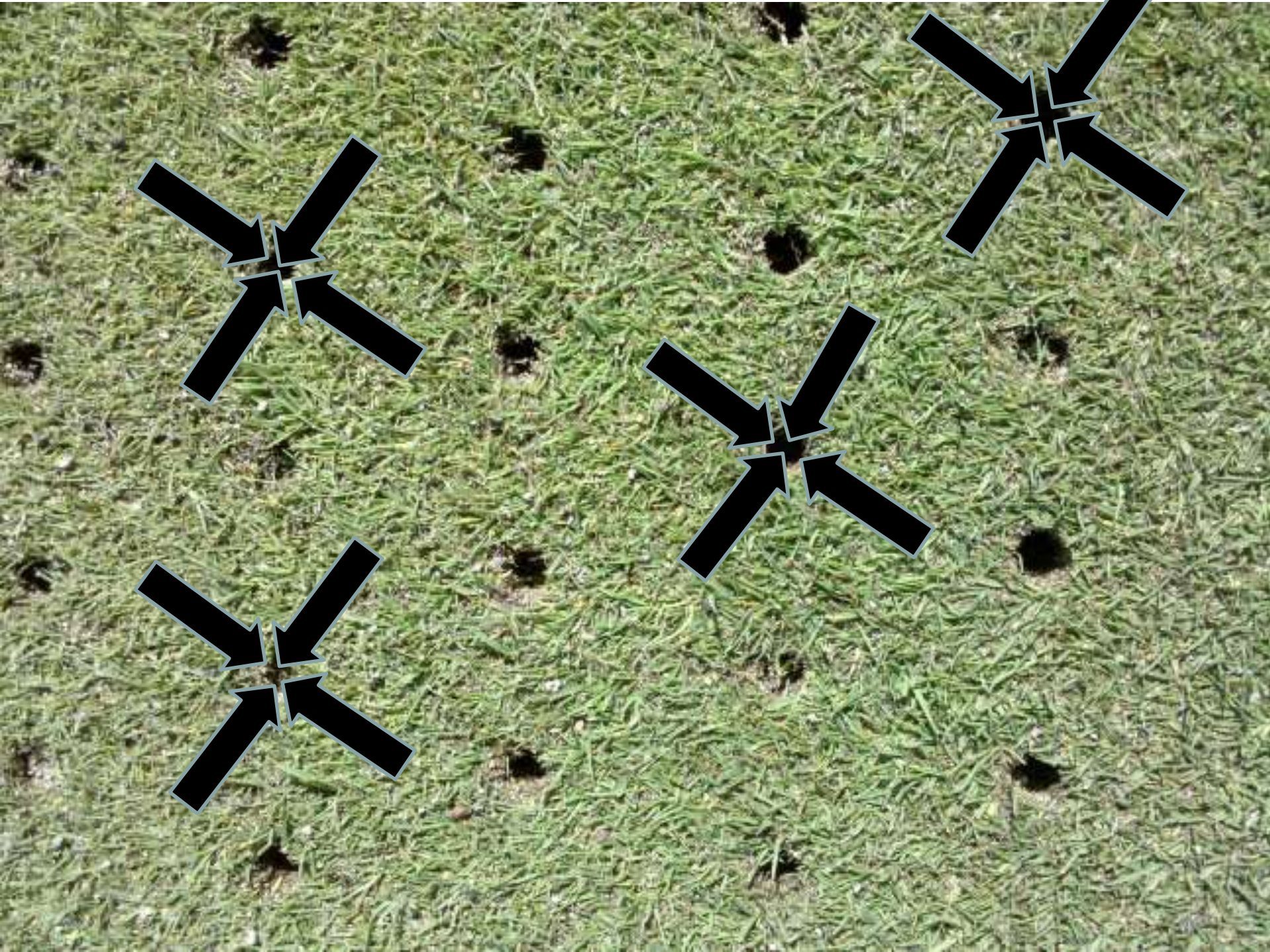






Take a look at the holes





Aerification can ...

1. Remove and decompose thatch and excessive organic matter
2. Removes and breaks up layers
3. Increases water infiltration and air exchange

Improving drainage through Aerification

Sand injection techniques


These methods are not Aerification!!
They are helpful in improving drainage!

Sand injection will improve drainage and infiltration!!!

Dry-Ject

However core Aerification is the ***only*** activity on Turf that will improve the soil structure ... other then rebuilding.

Aerification = Grass

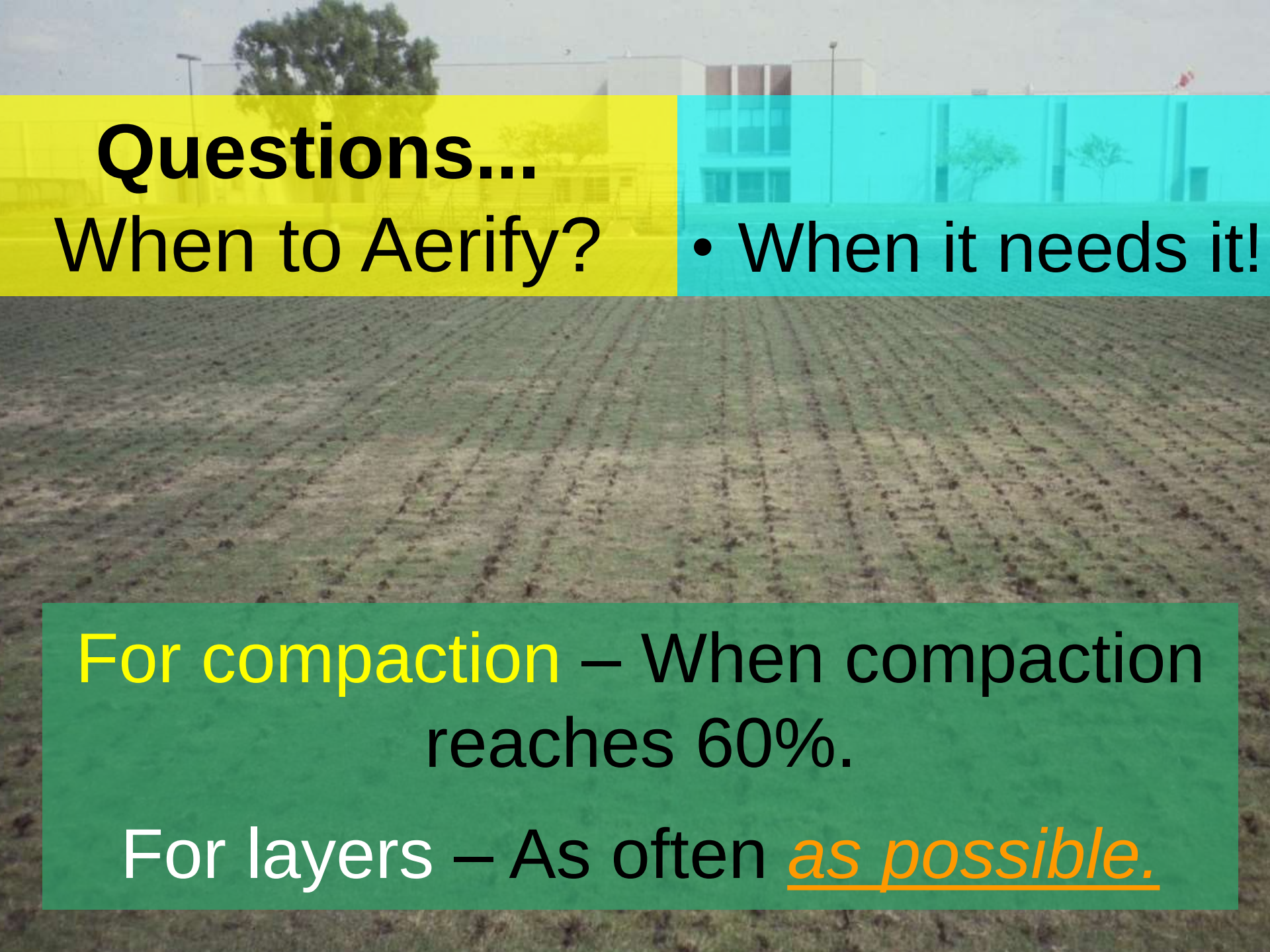
Pine Valley 9th green

No Aerification = No Grass


Questions...
When to Aerify?

Question:
When do you drink water?

Answer:
When your thirsty…



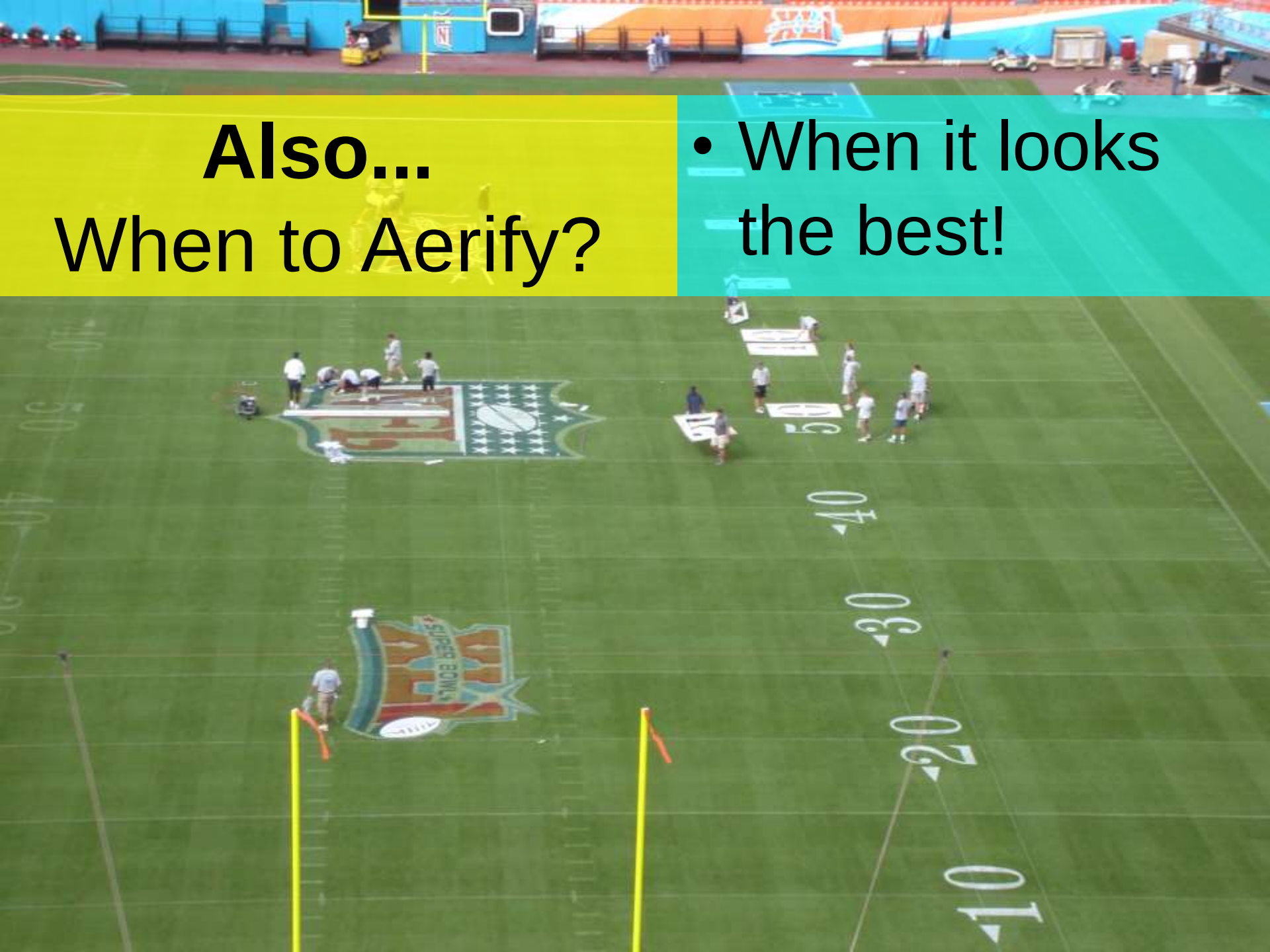
Questions...

When to Aerify?

- When it needs it!

For compaction – When compaction reaches 60%.

For layers – As often *as possible.*



Also...
When to Aerify?

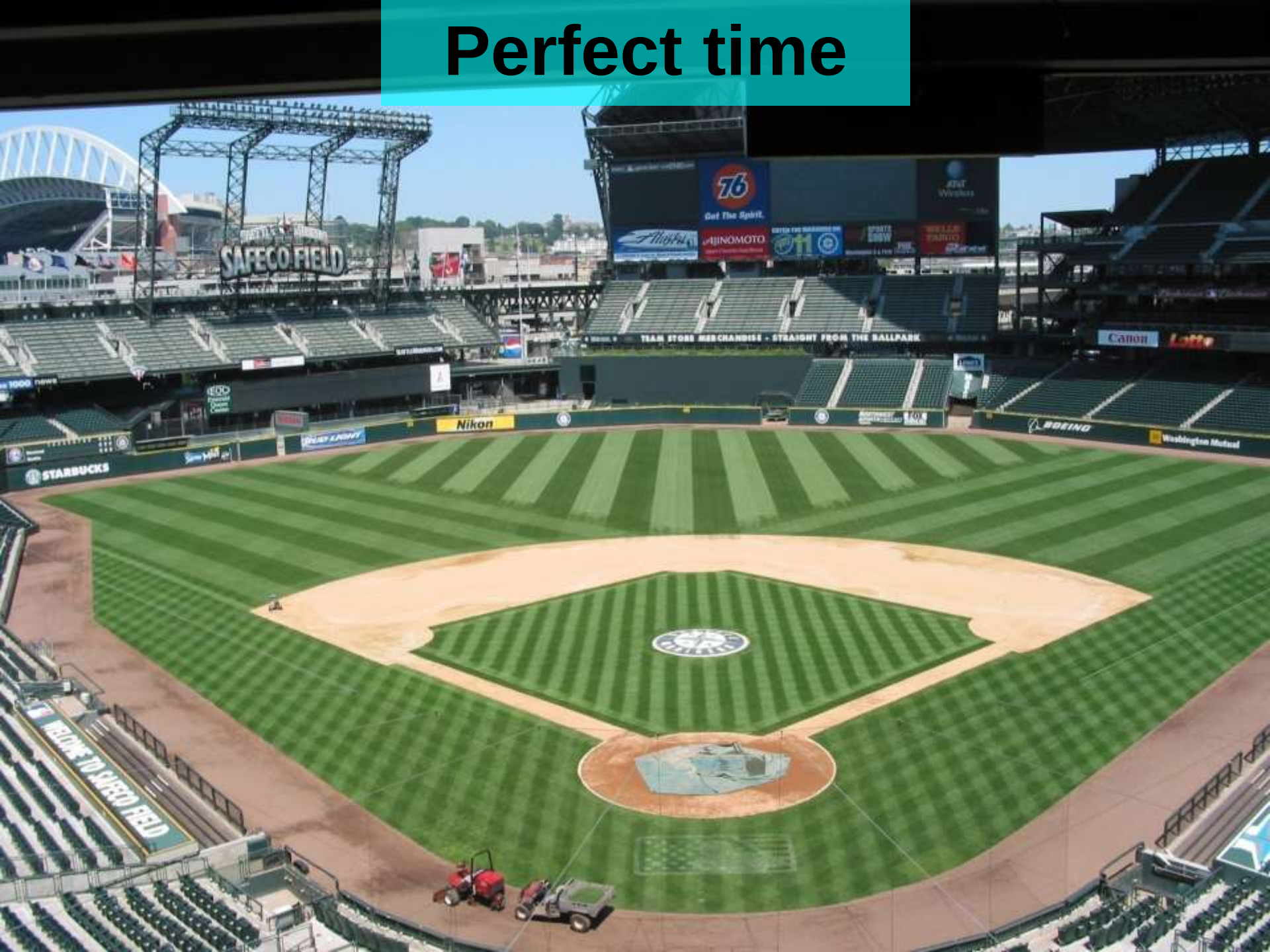
- When it looks the best!


Don't wait until its too late to
Aerify
Holes in dead grass = FAIL


Too late!!!

Way too late!!!

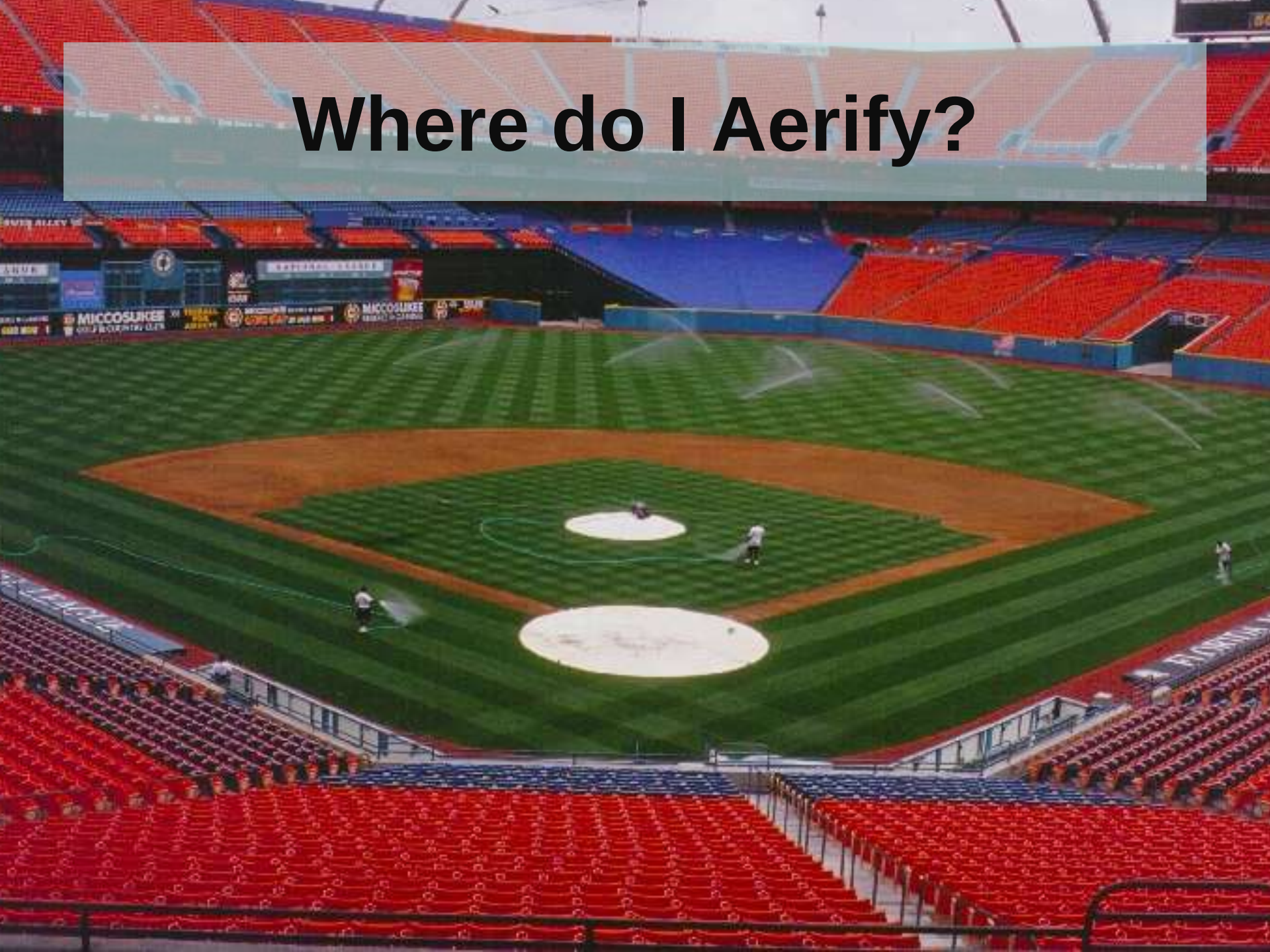
Perfect time



Perfect time to Aerify


Don’t Aerify dormant grass!
Need recovery time

Where do I Aerify?




MICCOSUKEE
MICCOSUKEE

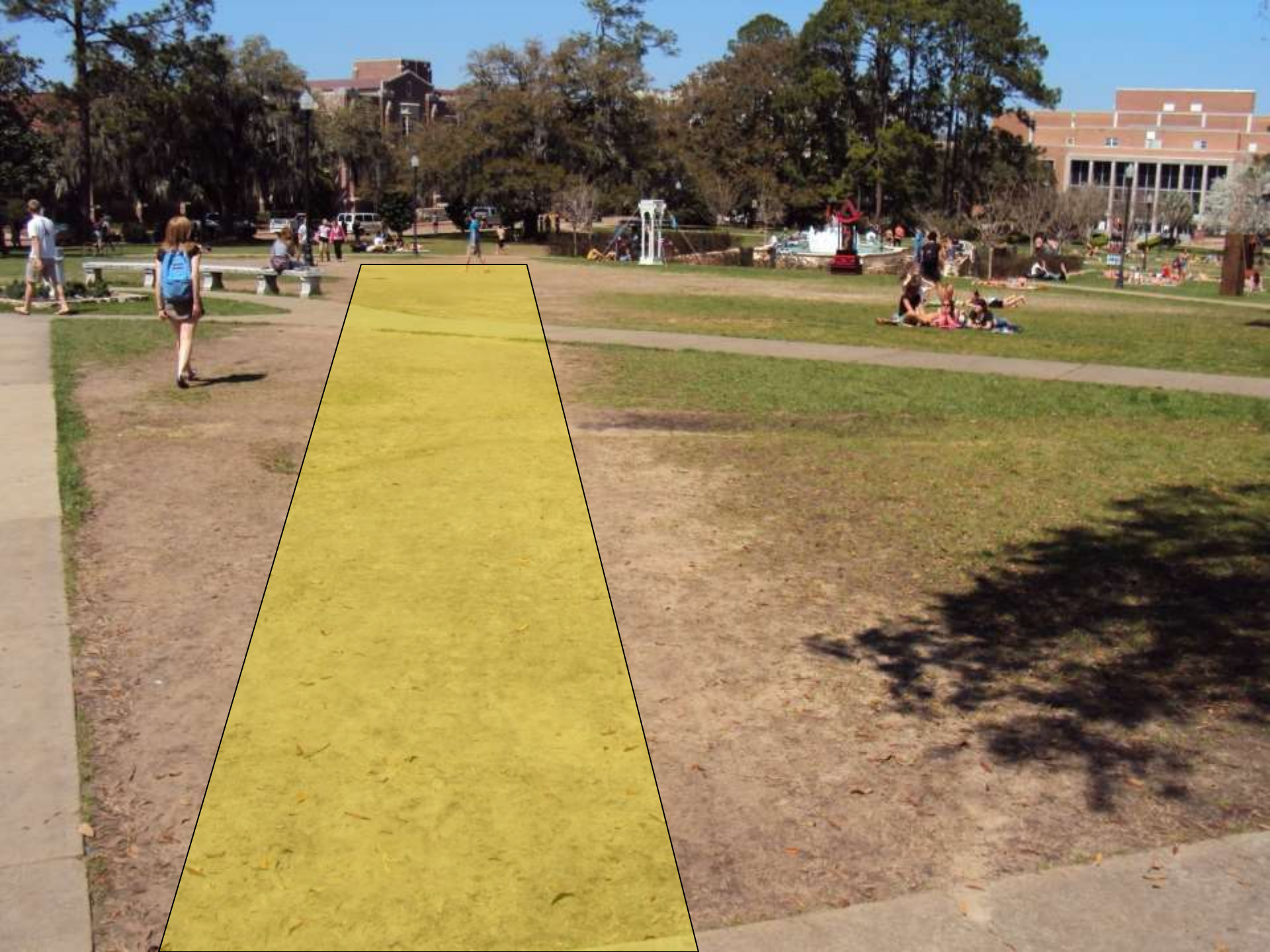
JAGUARS

JAGUARS

JAGUARS

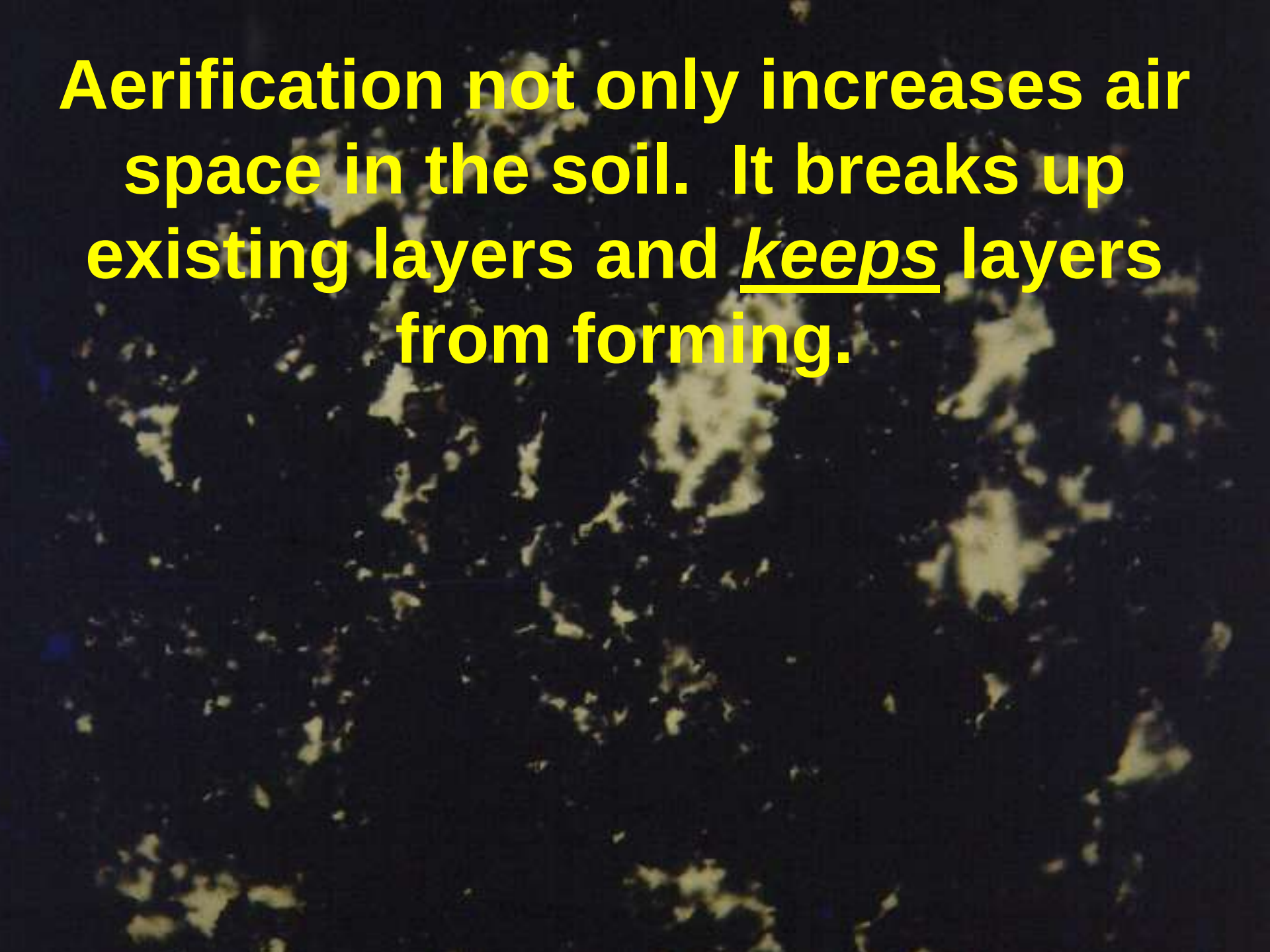

Some areas almost never need
Aerification... No traffic


Some areas almost never need
Aerification... No traffic




...also fertilize these wear areas more often!

Fertilize your wear areas more often!


Aerification not only increases air space in the soil. It breaks up existing layers and keeps layers from forming.

Again!!!

Core Aerification is the ***only*** activity on Turf that will improve the soil structure ... other then rebuilding.

Demolition derby

Photo submitted by Dan Douglas, Director of Stadium Grounds at FirstEnergy Stadium, Reading, PA.

SportsTurf
Dec 2007

Bubbling mud pools from volcanic activity

Photo Courtesy: Photo courtesy of Douglas Linde, PhD, Professor of Agronomy, Delaware Valley College, Doylestown, PA Arikikapakapa Golf Club, Rotorua, New Zealand.

GCM

Mar 2007

*** Photo courtesy of Paul Sutter, Superintendent Emerson G.C., Emerson, NJ. (Dec 04 GCM Issue)**

*Photo submitted by Scott Zakany, CGCS, President of International Golf Maintenance, Champions Gate, Florida. Photo is from Rio Mar Wyndham Resort in Rio Grande, Puerto Rico. (June 2008 GCM Issue)

Iguanas

Ground squirrels

Steam tunnels

Photo submitted by Ryan McGillivray, student at UMass Amherst and part time grounds crew worker for the University Landscape Management Department under the direction of Gary Glazier.

SportsTurf
Issue: Oct 2011

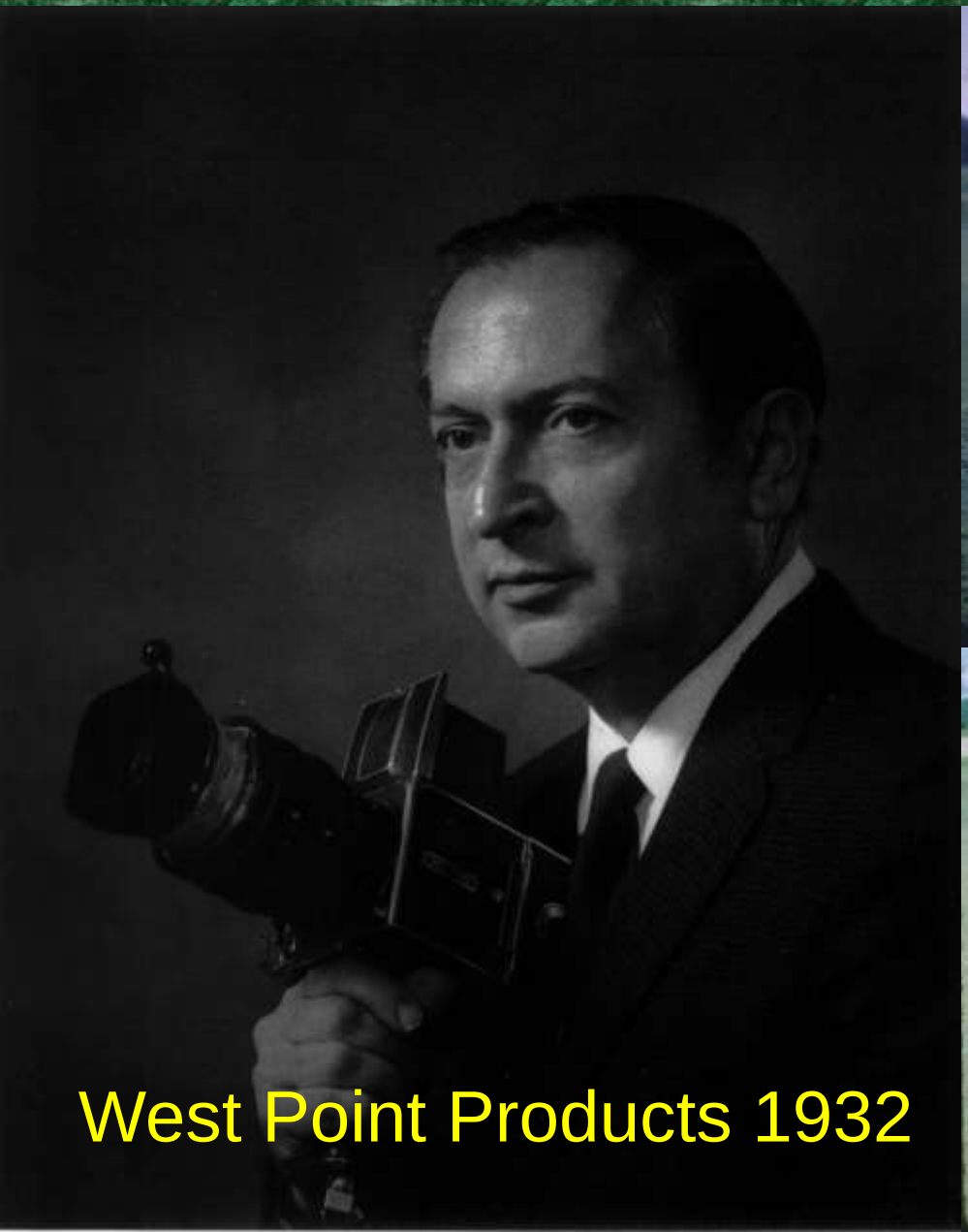
- Issue: January 2004
- Turfgrass Area: Athletic Field
- Location: Central Florida
- Problem: The turf is thin with the exception of the strip in the center.

Answer: Infrequent Verti-Cutting and a missed strip causing a “Mohawk”.

If you don’t Verti-Cut frequently, you build up thatch. Thatch also causes layers!

What causes thatch?

Tom Mascaro



West Point Products 1932

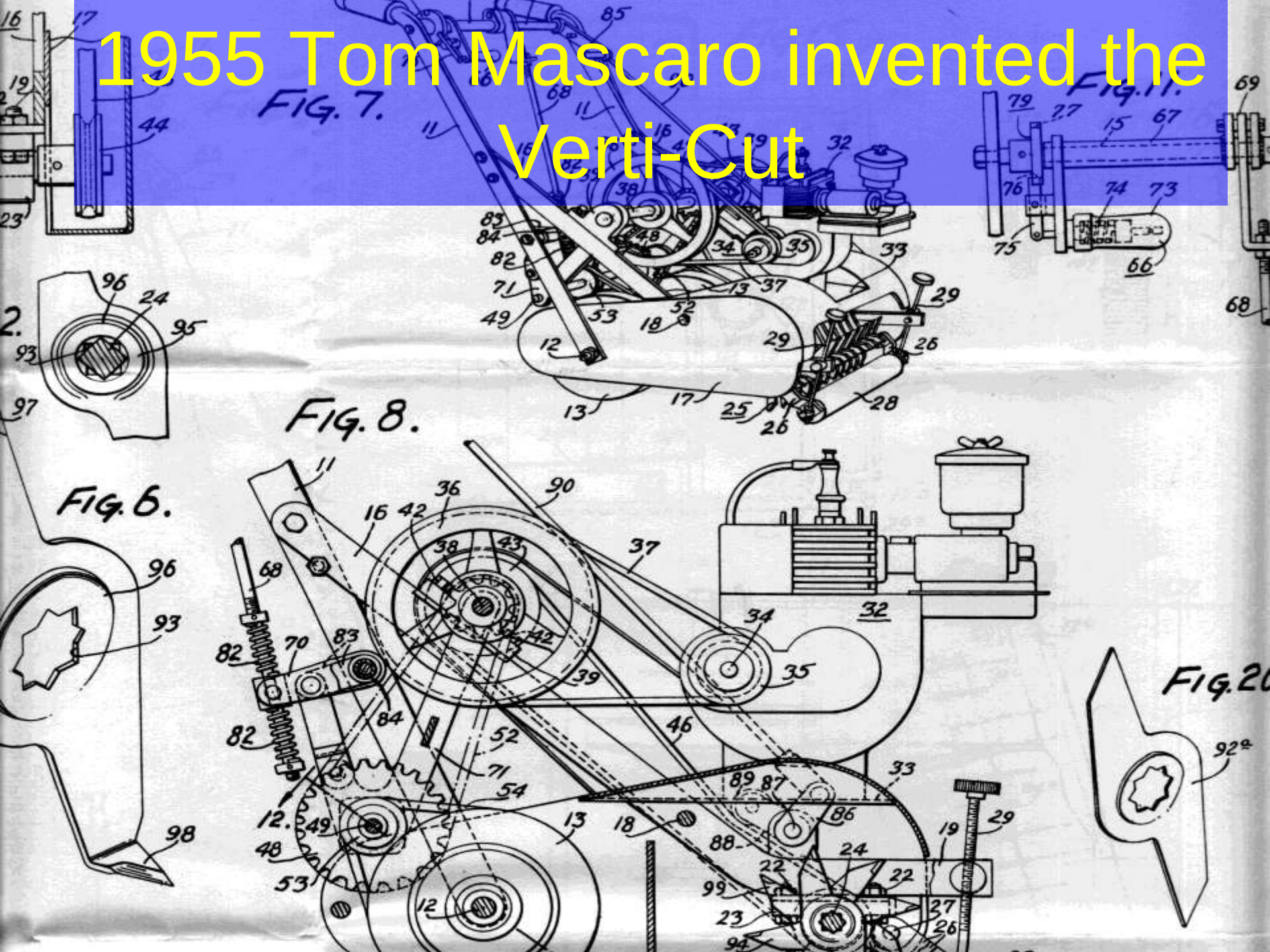

Topdressing is an excellent way to decompose thatch.

World War II, WWII (1939 - 1945)


World War II, No topdressing


Wilshire Country Club
Los Angeles, CA. 1951

1955 Tom Mascaro invented the Verti-Cut



The Verti-Cut was designed as a mower, to cut prostrate leaves.


Verti-Cut 1955

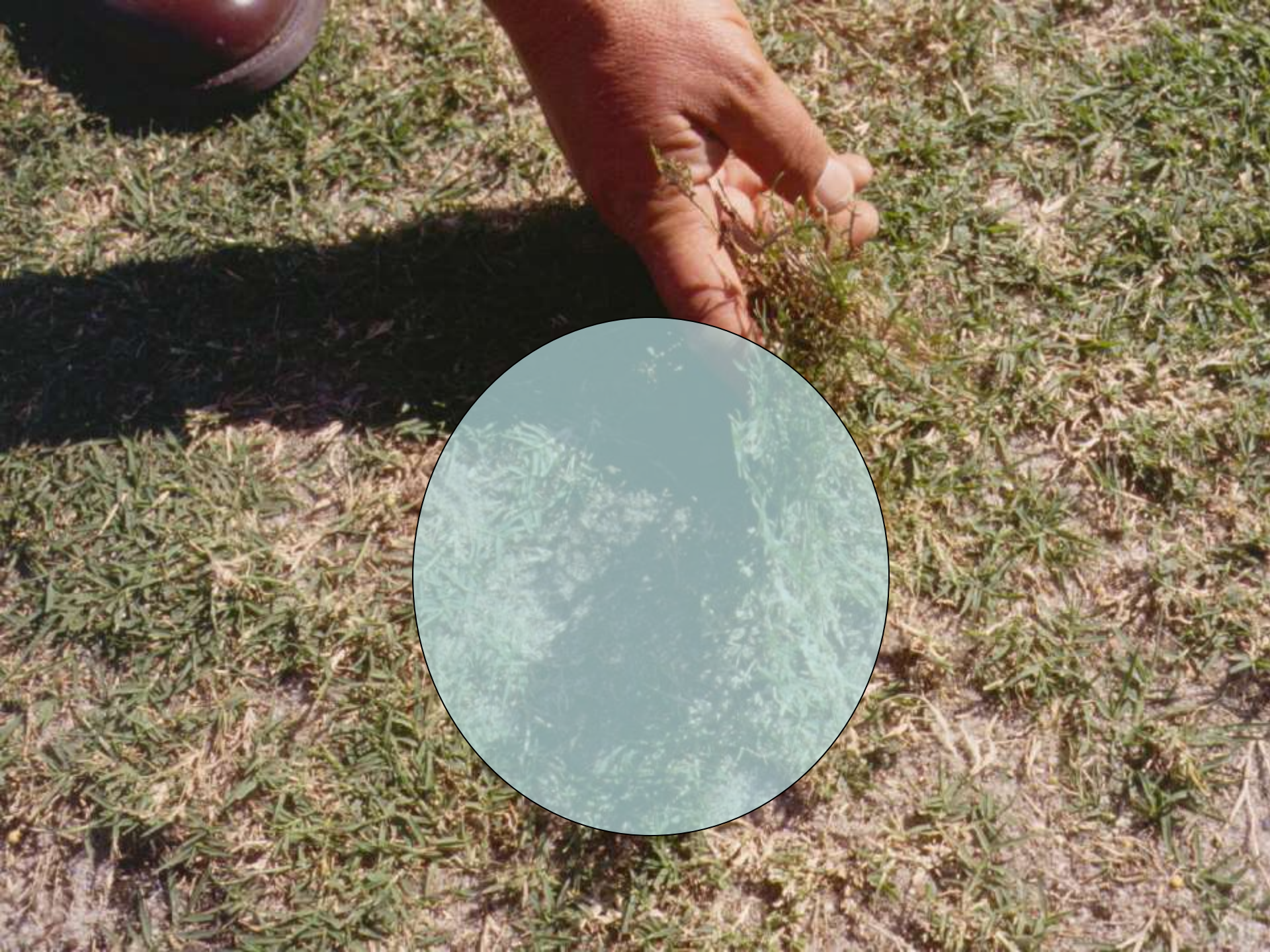
When people started to Verti-Cut, because of the rotation of the blades, it also removed thatch.

1970 West Point and Hahn merged and Tom Mascaro developed the Triplex Verti-Cut for Hahn-West Point.


KUBOTA

Damage to stolons or rhizomes

Damage to stolons or rhizomes




If thatch is not *removed* or allowed to *decompose* it either builds up...

...or it is buried by topdressing!


50 year
old green!

Keep a good sense of humor

Nov 2008

Donuts all on golf green

Photo courtesy of Eric S. Morrison, Golf Course Superintendent at Shennecossett Golf Course in Groton, Connecticut.

Donuts on golf greens

Gary Morris, Superintendent - Ole Miss GC - Oxford, MS

Photo courtesy of Tim Legare, CFSM at the City of Callaway, Callaway, Florida.

Donuts on athletic fields

Photo submitted by Ryan McGillivray. Gary Devaux is Superintendent at Topstone Golf Course, South Windsor, CT

GCM Feb 2011

* Photo courtesy of Jason W. Bowers, Sports Turf Manager at Virginia Tech Virginia Tech (Dec 06 Sports Turf Issue)

Brace yourself for anything

Keep your feet firmly on the ground

Always look over your shoulder

… you may be surprised what's back there

18 foot alligator - Florida

•Photo courtesy of Mike McCullough, Northern California Golf Association

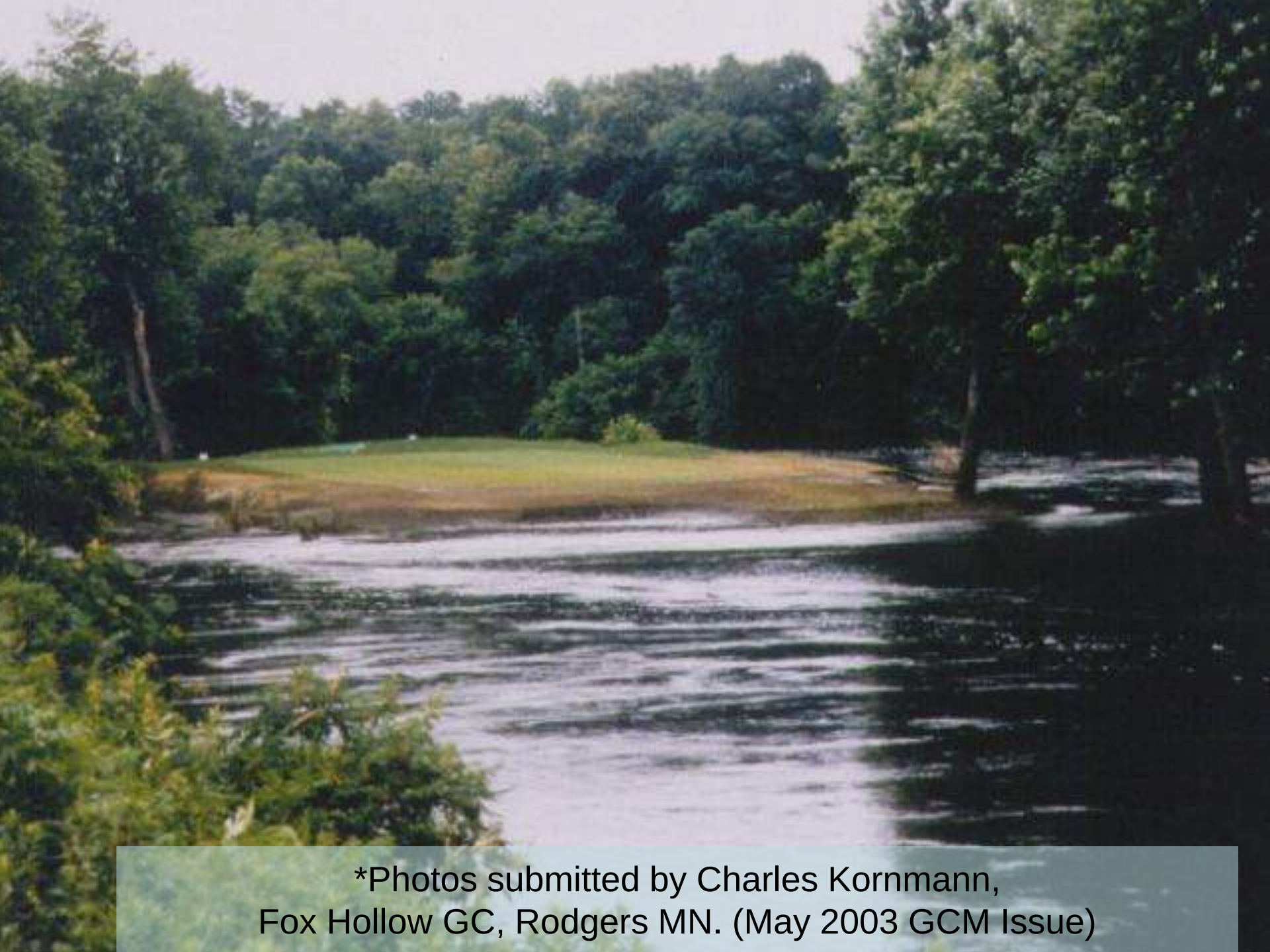

Bee’s
TORO

*Photos submitted by Chris Denson, Sports Turf Manager, University of Miami. (Jan 2008 SportsTurf Issue)

*Photo submitted by Sue DeZwart, Talking Turf Consulting Co, Mpumalanga, South Africa. (December 2007 GCM Issue)

*Photo submitted by Jeff Sweet, CGCS, General Manager at Bucks Run Golf Club in Mt. Pleasant, Michigan. (October 2010 GCM Issue)

Ice on Fairways



*Photos submitted by Charles Kornmann,
Fox Hollow GC, Rodgers MN. (May 2003 GCM Issue)

* Peter Thibeault CSFM, Sports Turf Manager at Noble and Greenough School in Dedham, Massachusetts (Not used yet)

Floods on Multipurpose fields

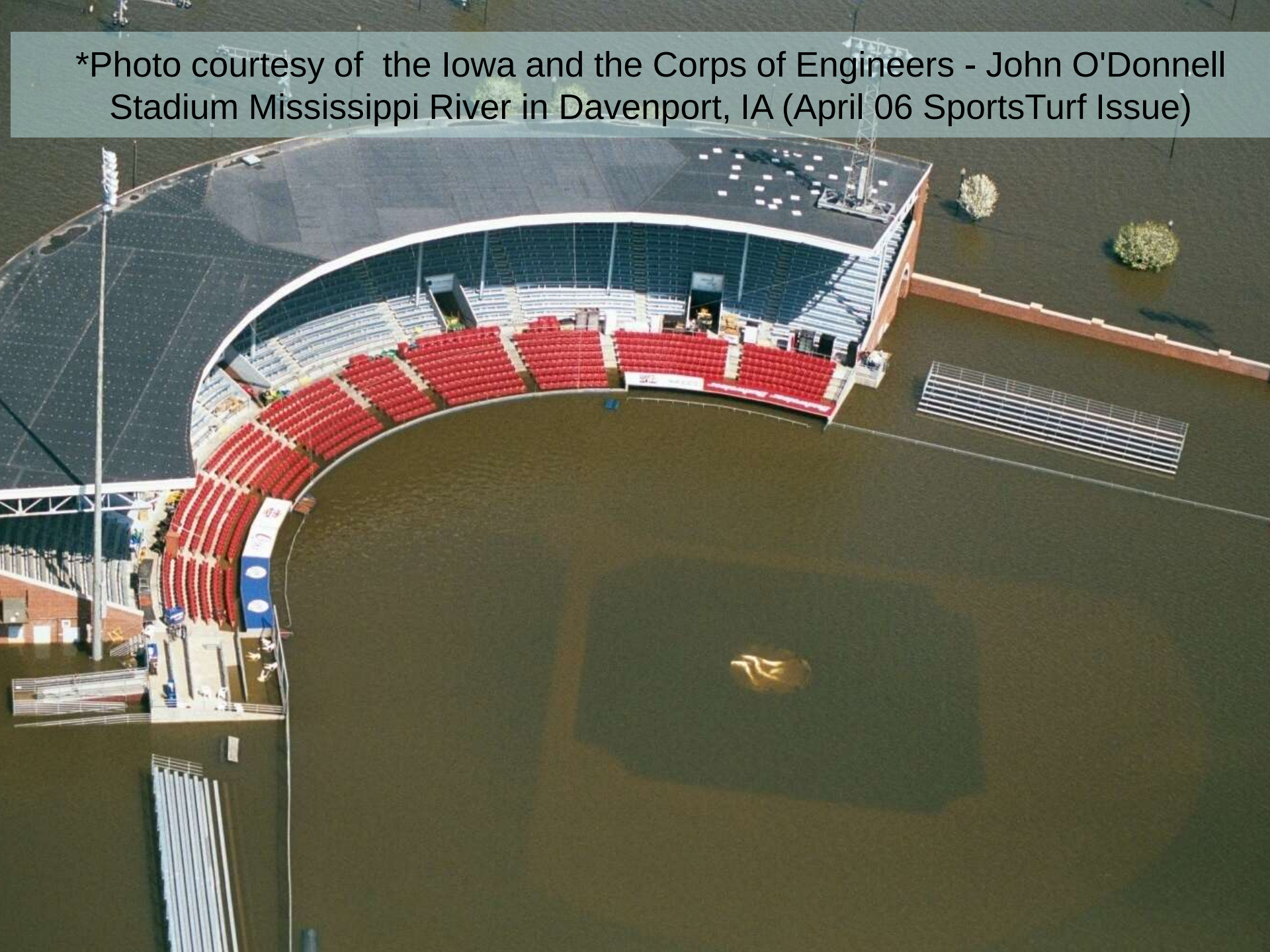
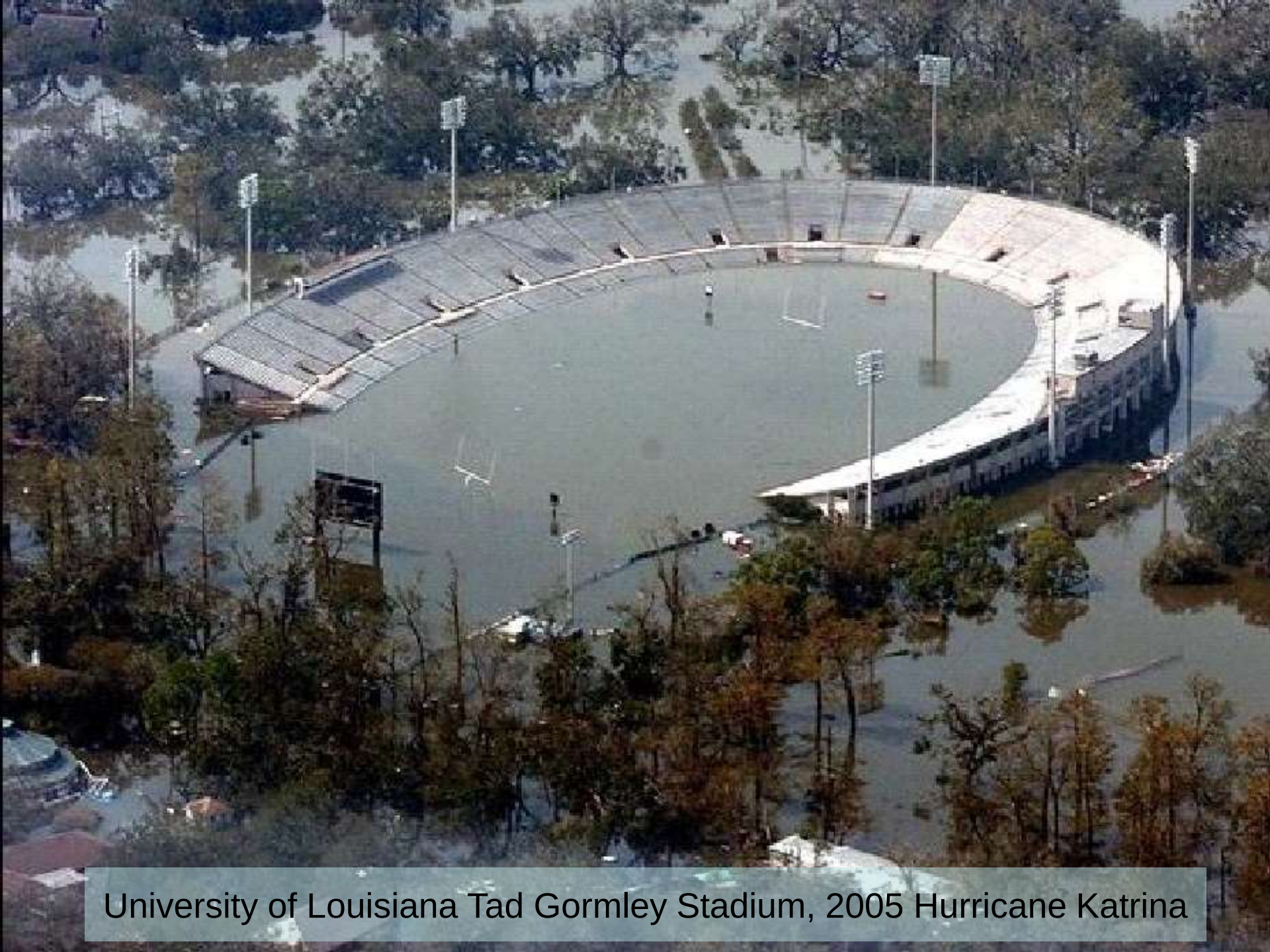


*Photo courtesy of the Iowa and the Corps of Engineers - John O'Donnell Stadium Mississippi River in Davenport, IA (April 06 SportsTurf Issue)



University of Louisiana Tad Gormley Stadium, 2005 Hurricane Katrina

Photo submitted by Mark Clay and Nick Fedewa, Jacksonville Municipal Stadium (July 10 SportsTurf Issue)


Always try to keep your head above water

Photo courtesy Photo submitted by Jim Peacock, Superintendent at Meadow Lake Golf Resort in Columbia Falls, MT. (May 2008 GCM Issue)

Photo submitted by David M. Peek Jr, Superintendent, Wildewood Country Club, Columbia, SC. (Dec 03 GCM Issue)

Photo courtesy of Jeff Whitmire, Golf Course Superintendent, Williamsburg Country Club, Williamsburg, Virginia. (July 04 GCM Issue)

Photo courtesy of Bob Golladay, Mechanic at the Ken McDonald Golf Course, Tempe, AZ. The supervisor at the club is Tim Pfannenstein and the Assistant is Rich Beardsley. (Jan. 06 GCM Issue)

Hot mounds

Photograph submitted by an anonymous reader.
(April 2008 SportsTurf Issue)

Hot baselines


PAY

Thank you!

John Mascaro
President

Turf-Tec International

Please submit any photos you have to:

john@turf-tec.com