

**Boo!**

# **Environmental Risk Management at Your Golf Course**

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# Golf Course Management is Easy...



# The Laundry List of Risky Environmental Management Practices

**Environmental Training**  
**Soil Management**  
**Compliance Management**  
**Spray Drift Management**  
**Waste Management**  
**Conservation Management**  
**Vegetation Protection**  
**Environmental Auditing**  
**Water Quality**  
**Environmental Induction**  
**Recycling Management**  
**Contractor Management**  
**Chemical Inventory**  
**Environmental Permits**  
**Wildlife Protection**  
**Traffic Management**  
**Odour Management**  
**Environmental Risk Assessment**

**Dangerous Goods Management**  
**Fertiliser Management**  
**Pesticide Management**  
**Rinsate Management**  
**Stormwater Management**  
**Construction Management**  
**Habitat Protection**  
**Environmental Reporting**  
**Heritage Protection**  
**Noise Management**  
**Pollution Prevention**  
**Incident Management**  
**MSDS Management**  
**Renovation Programming**  
**Fleet Management**  
**Environmental Safety**  
**Tree Management**  
**Environmental Policies**

**Hazardous Materials Management**  
**Herbicide Management**  
**Conservation Management**  
**Effluent Management**  
**Environmental Planning**  
**Erosion Management**  
**Irrigation Management**  
**Environmental Monitoring**  
**Contractor Management**  
**Air Management**  
**Environmental Procedures**  
**Environmental Complaints**  
**Environmental Records**  
**Community Liaison**  
**Energy Management**  
**Groundwater Protection**  
**Buffer Zones Management**  
**Emergency Response**

# Risk & Liability

## The Warringah Golf Club Incident...



Over 10,000 fish were killed as a result of the February 2001 pesticide spill at the Warringah Golf Club, an accident which cost the club \$600,000 and its former superintendent 250 hours of community service



# Risk & Liability



## State Fines Bull Shoals Golf Course over Chemical Spill

By: KARK 4 News

Updated: November 17, 2010



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THE ROANOKE TIMES

Friday, May 4, 2012



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Friday, May 04, 2012

## Blacksburg Country Club to pay \$19,000 over spill, fish kill

Blacksburg Country Club will also complete six riverbank restoration projects.

By [Laurence Hammack](#)

981-3239

Blacksburg Country Club has agreed to pay nearly \$19,000, in addition to financing an environmental restoration project, to make amends for a chemical spill that killed thousands of fish.

The agreement reached in federal court is the latest regulatory action to come from a 2007 accident that



there have been  
Environmental Quality  
Act.

Golf Course and

d in July by an  
River.

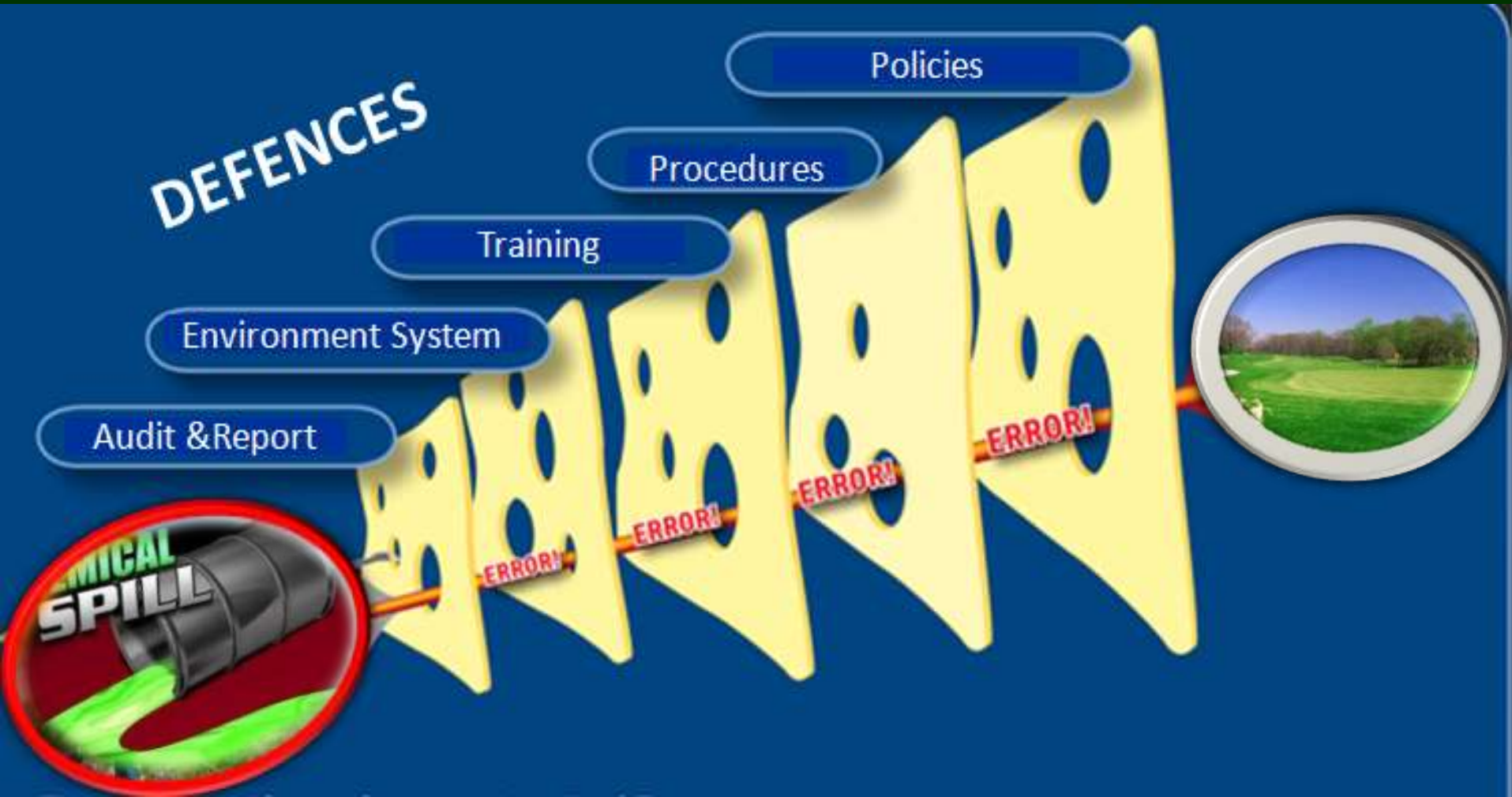
Game and Fish  
dead fish in the

than 15 gallons of  
erred the stream.

used to control  
shwater fish and

d on the soil near

# Holes in Your Environmental Management Regime?



Lead to... Accidents, Spills, Pollution

# Ignorance is NOT Bliss...and can lead to bad things



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# **What's the Greatest Source of Environmental Risk at a Golf Course?**

# Greatest Source of Environmental Risk...



# Environmental & Safety Management Systems:

- **Help to Fix the Holes**
- **Help Manage the House**
- **Help Become Strategic**
- **Manage Risk**



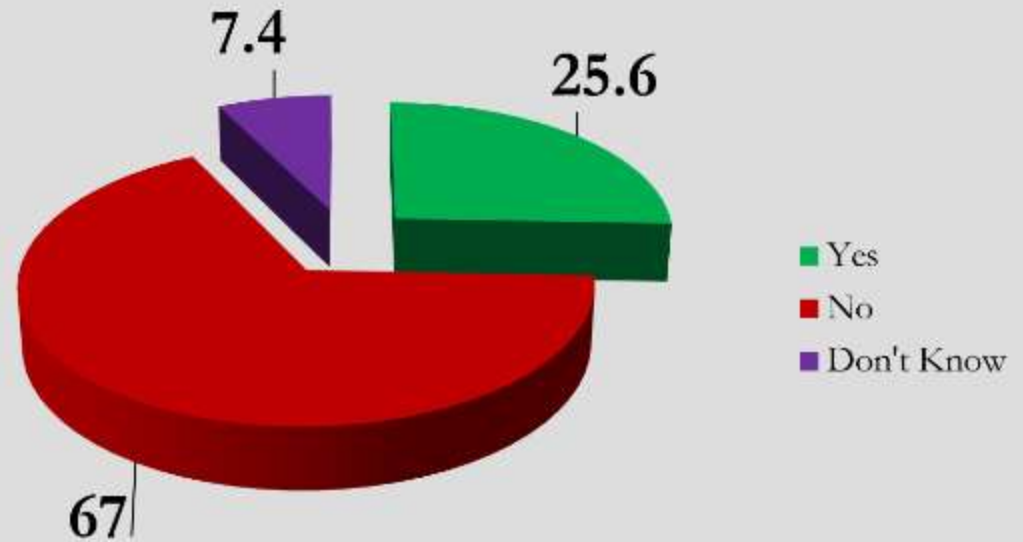
# 18 Elements of ISO 14001-2004



# An Environmental Policy Statement



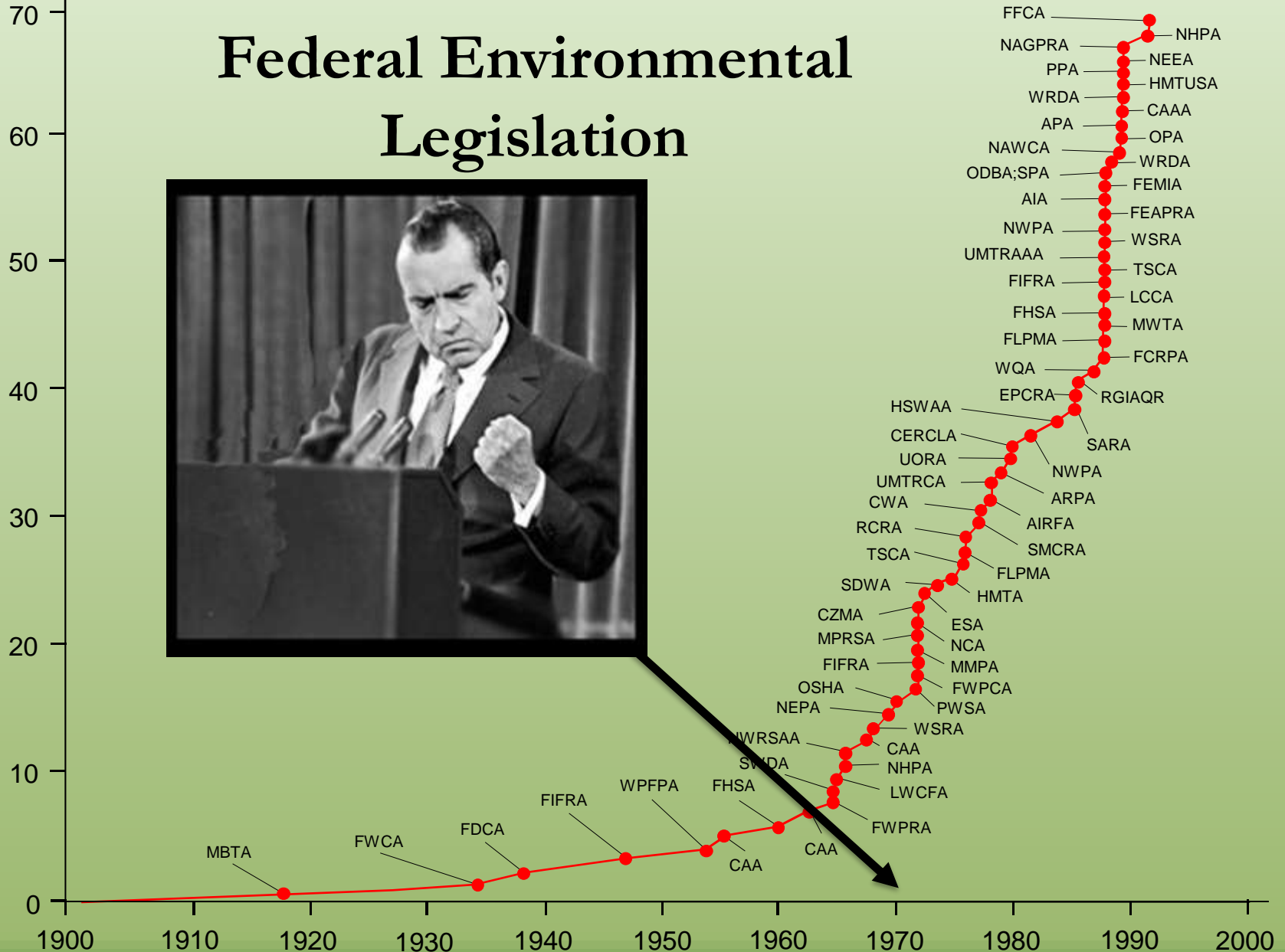
Do You Have a Written Environmental Policy?



# Federal Environmental Legislation



CUMULATIVE NUMBER OF LAWS AND AMENDMENTS



YEARS

# Planning... Risk, BMPs, Rewards.



## The Devil is in the Details

Environmental Management Systems (EMS) and golf courses.

BY ROBERT N. CARROW AND KEVIN A. FLETCHER

The identification of significant environmental issues and the environmental management program developed for the golf course are key issues to EMS effectiveness. The third component is the development of a viable outreach program.



## Golf Course Environmental Profile

Property Profile and Environmental Stewardship of Golf Courses  
Volume I Summary



### Inside:

- ▶ Golf Course Acreage
- ▶ Turfgrass Species
- ▶ Water Bodies
- ▶ Wildlife Habitat
- ▶ Environmental Improvements

We often create our own risk...



# Conduct a Risk Assessment

IMPACT	WATER		AIR			NOISE	SOIL	FLORA	FAUNA	VISUAL	WASTE	CONSUME/CONSERVE NATURAL RESOURCE	Aspects and Impacts Risk Assessment		
ACTIVITY & ASPECT	SURFACE WATER	GROUNDWATER	SPRAY DRIFT	ODOR	DUST	GASEOUS EMISSIONS		ENHANCEMENT	LOSS	ENHANCEMENT	LOSS				
Irrigation															
Operate system	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓		I R O F C  N/A	
Consume water												✓	✓	I R O F C  N/A	
Consume energy						✓						✓	✓	I R O F C  N/A	
Mobilized sediment	✓	✓					✓	✓			✓			I R O F C  N/A	
Pesticide runoff	✓	✓					✓	✓		✓				I R O F C  Reversible environment business	
Nutrient leaching	✓	✓					✓	✓		✓				I R O F C  N/A	

Pesticide leaching
Nutrients runoff
Heavy metal leaching
Over irrigation
Recycled water use

FREQUENCY	
Improbable	I
Remote	R
Occasional	O
Frequent	F
Continuous	C

SEVERITY	
Positive impact on environment thus positive impact on business.	
Limited and/or localized impact on the environment and/or business	
Reversible impacts, wider implications to environment and/or business	
Serious long term implications for environment and/or business	
Serious permanent damage to the environment and/or business.	

# Develop your own Environmental Action Plans...

## Your New Target Action Plan

ACTION PLAN

DOCUMENT NO:

DATE:

ENVIRONMENTAL OBJECTIVE

ENVIRONMENTAL TARGET

TASKS OR ACTIONS TO ACHIEVE OBJECTIVE AND TARGET

RESPONSIBLE PERSON

PROJECTED COSTS

Name and Signature:

Date:

Save



# SOPs

# &

# Training



SOP TITLE		CHEMICAL DELIVERY	
SOP NUMBER	ENV-CM-01-2012	DATE ISSUED	2 FEBRUARY 2012
PURPOSE AND SCOPE			
In order to manage the risk of spillage from chemicals delivered to site a procedure is required to ensure chemical delivery occurs under controlled conditions.			
This SOP details the requirements for obtaining and receiving chemicals in the turf maintenance facility.			
PROCEDURE			
1	The purchase of any chemical that is not on the existing inventory must have prior approval from the Course Superintendent.		
2	No chemical container is to be accepted without adequate identifying label information.		
3	A staff member must be present during all chemical deliveries to ensure delivered chemicals are not left exposed or abandoned.		
4	All chemicals delivered will be placed into the chemical storage area.		
5	When receiving chemicals record date received on each container.		
6	Add all deliveries to Chemical Inventory list.		
7	If new chemical ensure MSDS is provided by supplier.		
8	Determine appropriate storage location using MSDS.		
9	Place chemical in appropriate storage location.		
10	If chemical is moved to a new location for storage purposes update the inventory to show new location.		
AUTHORISED BY:		DAVID SOMERVILLE	DATE: 02/02/2012

# Internal Audits and “Management Reviews”



# Moving from Risk... To Peace of Mind



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