



SELF-LEARNING MODULE

Environmental Risk Management Action Plan

A practical self-study guide for Baltic marina professionals

How to use this module

This document is designed for independent study. Work through each unit at your own pace, engage with the risk matrices, apply the scenarios to your own marina, and test yourself with the quiz. Estimated study time: 50–70 minutes. The ERMAP is grounded in ISO 14001:2015 and Baltic-specific environmental data from the ECOMARINAS project.

Learning Objectives	Module Contents
<p>After completing this module you will be able to:</p> <ul style="list-style-type: none"> • Explain the purpose and structure of an ERMAP • Apply the Likelihood × Severity risk scoring method • Identify the six risk categories and key controls for each • Describe what inspectors look for and why documentation matters • Build a prioritised 90-day action plan for your marina • Connect the ERMAP to ECOMARINAS certification 	<ul style="list-style-type: none"> • Unit 1: What Is an ERMAP and Why Does It Matter? • Unit 2: The Risk Scoring Methodology • Unit 3: The Six Risk Categories • Unit 4: What Inspectors Look For • Unit 5: Implementation Roadmap & Your Action Plan • Self-Assessment Quiz (10 questions) • Scenario Exercises (3 scenarios) • Key Terms Reference

Unit 1: What Is an ERMAP and Why Does It Matter?

The Environmental Risk Management Action Plan — or ERMAP — is a structured, science-based framework for identifying, assessing, and managing the environmental risks associated with marina operations. It follows the principles of ISO 14001:2015, the international standard for Environmental Management Systems, and applies them specifically to the context of small leisure marinas serving recreational boats and yachts.

Why Small Marinas Need a Risk Management Plan

There is a common perception that small marinas are too minor to need formal environmental management. The evidence does not support this:

- Small marinas are positioned at the land-sea interface — the precise location where most marine pollutants concentrate. Surface oils, antifouling biocides, sewage, and microplastics all accumulate at the water's edge.
- The Baltic Sea is one of the world's most ecologically stressed water bodies — shallow, semi-enclosed, with very slow water exchange. Pollutants introduced into the Baltic do not flush away; they accumulate for decades.
- Marinas are highly visible and accessible to environmental inspectors. Compliance failures — a missing spill kit, an unlabelled waste bin, a broken pump-out — are easy to detect and frequently penalised.
- Most penalties issued to Baltic marinas are not for actual pollution events. They are for missing documentation: procedures never written, training never recorded, signage never posted. An ERMAP addresses all of these.

The Core Purpose

The ERMAP provides a practical pathway for small marinas to move from reactive environmental management — responding to incidents after they occur — toward a preventive, structured, and sustainable approach aligned with ISO 14001 principles.

What the ERMAP Covers

The ERMAP addresses six risk categories relevant to small marina operations:

#	Risk Category	What It Covers
1	Wastewater Management	Blackwater and greywater from vessels, marina sanitary facilities, maintenance wash-down runoff



2	Hazardous Liquids Management	Fuels, engine oils, lubricants, chemical solvents, antifouling paints and thinners
3	Water Quality Protection	Nutrient loading, hydrocarbon contamination, turbidity, runoff from docks and parking areas
4	Invasive Species Prevention	Hull fouling, bilge and ballast water, equipment transfer between water bodies
5	Plastic Pollution Management	Macroplastics from vessels and visitors, microplastics from hull abrasion and equipment wear
6	Additional Environmental Risks	Fire risk, noise and light pollution, electromagnetic disturbance, management deficiencies

Reflection

Before reading further, consider: does your marina currently have any kind of written environmental management document? If yes, which risk categories does it address? If no, which category would you address first if you had to choose one?

Unit 2: The Risk Scoring Methodology

The ERMAP uses a simple but powerful formula to prioritise environmental risks. Rather than treating all risks as equally important, it scores each risk source on two dimensions — likelihood and severity — and multiplies them to produce a risk level that guides management decisions.

The Formula

$$\text{Risk Rating} = \text{Likelihood (L)} \times \text{Severity (S)}$$

The Likelihood Scale (1–5)

Score	Level	Marina Example
1	Rare	<i>A catastrophic fuel storage tank failure — possible but exceptional</i>
2	Unlikely	<i>A pump-out system failure during the season — could happen but not regularly</i>
3	Possible	<i>Maintenance wash-down water reaching the basin — plausible under normal operations</i>
4	Likely	<i>Vessels arriving with full holding tanks and no pump-out available — occurs regularly</i>
5	Almost Certain	<i>Visitor littering at a peak-season marina without waste bins on pontoons — happens frequently</i>

The Severity Scale (1–5)

Score	Level	What This Means
1	Negligible	No measurable environmental impact; fully contained on-site with no ecological consequence
2	Minor	Localised, short-term impact; aquatic environment recovers rapidly without intervention

3	Moderate	Measurable water quality or habitat disturbance; management action required but recovery is achievable
4	Major	Significant contamination or habitat disturbance; regulatory non-compliance; difficult to remediate
5	Severe	Long-term or irreversible ecosystem damage; major pollution incident; potential for prosecution

The Four Risk Levels

Score	Risk Level	Required Management Action
1–6	LOW	Manage through routine procedures. No urgent investment required. Monitor to ensure conditions remain stable.
6–12	MEDIUM	Implement specific mitigation measures. Plan and budget for infrastructure improvement within 6–24 months.
12–20	HIGH	Immediate operational controls required. Priority for Phase 1 roadmap actions. Inspectors will focus here first.
20–25	EXTREME	Urgent corrective action. Operational restrictions or emergency planning may be required. Highest regulatory breach risk.

Worked Example

Vessel blackwater discharge: Likelihood = 4 (Likely — many boats have full holding tanks and no legal disposal available). Severity = 5 (Severe — pathogen contamination and eutrophication are long-term risks). Risk Score = $4 \times 5 = 20$ = HIGH. Required action: pump-out facilities, holding tank requirements, discharge prohibition.

Unit 3: The Six Risk Categories

For each risk category below, study the risk matrix (which activities are highest-risk and why), then read the good practice summary. After each category, a self-check question helps you apply the content to your own marina context.

Category 1: Wastewater Management

Recreational vessels generate two main types of wastewater: blackwater (sewage from toilets) and greywater (from sinks, showers, and galleys). Marina sanitary facilities and maintenance wash-down areas are additional sources. In semi-enclosed marina basins with limited water exchange, these can cause eutrophication, pathogen contamination, and chemical pollution.

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Vessel blackwater discharge	4	5	HIGH	Pump-out facilities · holding tanks · discharge prohibition
Greywater from vessels	3	4	MEDIUM–HIGH	Education · greywater management policies
Marina sanitary facilities	2	4	MEDIUM	Sewer connection · regular inspections
Maintenance wash-down runoff	3	4	MEDIUM–HIGH	Containment areas · oil-water separators
Pump-out system failure	2	5	MEDIUM–HIGH	Preventive maintenance · emergency response plan

Good Practice Summary

Install accessible pump-out stations and maintain a monthly service log. Prohibit direct discharge through marina rules and posted signage. Connect sanitary facilities to municipal wastewater treatment. Have an emergency response plan for pump-out system failure.

Self-Check

Can visiting boats legally and conveniently discharge sewage at your marina right now? If not, what is the first step toward providing or improving pump-out access?

Category 2: Hazardous Liquids Management

Small marinas routinely handle diesel, petrol, engine oils, hydraulic fluids, antifouling paints, solvents, and cleaning chemicals. Even small spills of these substances can have disproportionate impact in enclosed marina basins with limited water circulation. The key risk is that most Baltic marinas lack basic spill prevention systems — and the most common stated reason is 'Not Necessary.'

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Fuel transfer to vessels	4	5	HIGH	Controlled fueling · drip trays · trained staff
Fuel storage tanks	2	5	MEDIUM–HIGH	Secondary containment · routine inspections
Oil & lubricant handling	3	4	MEDIUM–HIGH	Bunded storage · spill kits on-site
Chemical & solvent use	3	4	MEDIUM–HIGH	Proper labelling · limit quantities to need
Maintenance area runoff	3	4	MEDIUM–HIGH	Designated work areas · containment trays

Good Practice Summary

Store all hazardous liquids in secondary containment capable of holding 110% of the largest container. Maintain spill kits at all fueling stations and maintenance areas. Post a written spill response procedure at the fuel dock. Deliver annual staff training and record it with signatures.

Self-Check

Go to your fuel dock mentally. Can you immediately identify: (1) a spill kit, (2) a written spill response procedure, (3) emergency contact numbers? If any are missing, you have identified a Phase 1 action.

Category 3: Water Quality Protection

Water quality in marina basins is affected by surface runoff from docks and parking areas, vessel maneuvering, fuel spills, and in-water hull cleaning. Semi-enclosed marinas are particularly vulnerable because pollutants remain in the basin rather than being diluted by tidal or wave action. Key indicators to monitor: nitrogen and phosphorus levels, turbidity, dissolved oxygen, and hydrocarbon presence.

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Surface runoff from docks/parking	4	3	HIGH	Sediment traps · oil-water separators
Vessel maneuvering/propeller wash	3	3	MEDIUM	Speed limits · operational controls
Fuel handling & minor spills	3	4	HIGH	Spill kits · designated fueling areas
In-water hull cleaning	4	4	HIGH	Cleaning restrictions · contained maintenance areas
Uncontrolled wash-down	3	3	MEDIUM	Contained wash-down zones · filtration

Good Practice Summary

Restrict in-water hull cleaning — all cleaning should take place in a contained area where runoff is captured. Use eco-friendly, biodegradable cleaning products. Install sediment traps and oil-water separators in drainage systems. Monitor water quality weekly and record results.

Category 4: Invasive Species Prevention

Hull fouling — the accumulation of marine organisms on vessel hulls — is the primary mechanism by which non-native species are transported between Baltic marina basins. Species that arrive on a hull from the North Sea or Atlantic may find the Baltic's brackish conditions hospitable. Currently, approximately 37% of Baltic marina managers believe invasive species measures are 'Not Necessary' — a significant blind spot given the ecological vulnerability of the Baltic.

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Hull fouling on visiting vessels	4	4	HIGH	Regular inspections · cleaning guidance · antifouling management
Equipment transfer between water bodies	4	4	HIGH	Clean-Drain-Dry protocols · user awareness
Residual bilge/ballast water	3	3	MEDIUM	Drain-and-dry procedures · signage
Submerged marina structures	3	3	MEDIUM	Periodic inspection · maintenance planning

Good Practice Summary

Introduce a hull inspection form at berth check-in — a simple visual check that staff complete at boat registration. Post Clean-Drain-Dry signage at the marina entrance and at the fuel dock. Restrict in-water hull cleaning where biofouling material could be released directly into the basin.

Category 5: Plastic Pollution Management

Plastic pollution reaches marina waters from multiple sources: improper waste disposal by boat users and visitors, marina maintenance activities, and the slow degradation of synthetic ropes, fenders, and dock components. Marina basins act as microplastic accumulation hotspots due to limited water exchange. Most Baltic marinas have basic waste collection but lack true waste segregation and recycling infrastructure.

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Improper waste disposal from vessels	4	3	HIGH	Waste bins on pontoons · signage · awareness

Visitor-related littering	4	4	HIGH	Awareness signs · routine inspections · cleanups
Marina maintenance activities	3	3	MEDIUM	Waste segregation · staff procedures
Boat cleaning & hull abrasion	3	4	HIGH	Controlled cleaning · eco product selection
Wear of synthetic ropes/fenders	2	3	MEDIUM	Equipment management · replacement planning

Good Practice Summary

Provide clearly labelled, segregated waste stations accessible to boat users — including dedicated collection points for ropes, shrink wrap, and nets. Document waste collected by type and quantity to identify major sources. Run routine waterfront clean-up protocols with documented outcomes.

Category 6: Additional Environmental Risks

Beyond direct water pollution, marinas generate environmental risks from fire (contaminated firefighting runoff), noise (vessel engines, generators, maintenance), light pollution (disrupting marine and coastal wildlife), and — most importantly — management deficiencies. Unclear environmental policies, poorly defined responsibilities, and insufficient staff training are themselves environmental risks, because they increase the likelihood of incidents across all other categories.

Activity / Source	L (1–5)	S (1–5)	Risk Level	Key Control Measures
Fire risk (fuel + electrical)	3	4	HIGH	Fire prevention systems · emergency plans · drills
Noise pollution	3	3	MEDIUM	Quiet-hour policies · low-noise equipment
Light pollution	3	3	MEDIUM	Shielded directional lighting · timers
Electromagnetic disturbance	2	3	LOW–MEDIUM	Best-practice cable design and placement



Management deficiencies	3	4	MEDIUM-HIGH	EMS training · audits · certification pathway
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Good Practice Summary

Develop a written environmental policy with named responsibilities. Pursue ISO 14001:2015 certification or an eco-marina scheme (Blue Flag, Clean Marina) as a long-term target. Conduct annual staff briefings and internal audits. Coordinate fire emergency plans with local brigade.

Unit 4: What Inspectors Look For

Critical Finding

Most penalties issued to Baltic marinas are not for active pollution events. They are for missing documentation — procedures never written, training never recorded, signs never posted. A marina with adequate physical infrastructure but no paperwork will fail an inspection.

The Four Elements of Every Environmental Inspection

Regardless of the country or regulatory body, environmental marina inspections consistently assess four things:

Element	What This Means at Your Marina
Procedures	Written instructions for the key risk areas: waste handling, pump-out operation, spill response, hazardous substance storage. A one-page laminated card posted at the point of use often satisfies inspectors. The document does not need to be elaborate — it needs to be present and visible.
Training records	Evidence that staff have been briefed on environmental obligations. The minimum requirement is a record with: date, topics covered, and attendee signatures. Even a 30-minute informal staff meeting, properly recorded, satisfies this requirement.
Visual order	A clean, labelled, organised marina communicates compliance before a single question is asked. Labelled bins, clear pump-out signage, secured hazardous waste, visible spill kits — these all signal that environmental management is taken seriously.
Staff awareness	Inspectors regularly ask individual staff members directly — not the manager — questions like: 'What do you do if there is a fuel spill?' or 'Where does the pump-out waste go?' Staff who answer confidently demonstrate a genuine compliance culture. Staff who hesitate signal that training has not been effectively delivered.

Minimum Documentation Checklist

These are the documents most commonly missing in Baltic marina inspections. Review against your current situation:



	Document / Evidence Required	In place?
1.	Written spill response procedure — posted at fuel dock	<input type="checkbox"/>
2.	Spill kit inspection record — stocked and functional	<input type="checkbox"/>
3.	Pump-out facility maintenance log — monthly checks and repairs	<input type="checkbox"/>
4.	Waste management record — fractions collected, frequency, contractor	<input type="checkbox"/>
5.	Hazardous waste storage documentation — oil, batteries, paint waste	<input type="checkbox"/>
6.	Staff environmental briefing record — date, topics, attendee signatures	<input type="checkbox"/>
7.	Multilingual boater information signage — photograph as evidence	<input type="checkbox"/>
8.	Pump-out usage log — vessels using facility per month	<input type="checkbox"/>
9.	Water quality monitoring log — weekly visual check minimum	<input type="checkbox"/>
10.	Permit and licence register — all current permits accessible on-site	<input type="checkbox"/>

Unit 5: Implementation Roadmap & Your Action Plan

The ERMAP is structured into three progressive implementation phases. These are not sequential requirements — a marina can work on all three simultaneously — but they provide a logical prioritisation framework that reflects urgency, cost, and organisational readiness.

Phase 1 0–6 months	<p>Foundation & Immediate Controls</p> <p>Formally adopt ERMAP · assign environmental roles · deliver staff training · install basic infrastructure (spill kits, waste bins, signage) · establish protocols with local authorities and emergency services</p>
Phase 2 6–24 months	<p>Operational Controls & Monitoring</p> <p>Implement routine water quality monitoring · upgrade infrastructure (containment, drainage) · standardise operational procedures · launch user awareness campaigns · conduct internal audit</p>
Phase 3 24+ months	<p>Integration & Continuous Improvement</p> <p>Integrate ERMAP into formal EMS · align with ISO 14001 or eco-marina certification (Blue Flag, Clean Marina) · continuous performance benchmarking · periodic review of environmental objectives</p>

Your 90-Day Action Plan

Based on the risk matrices and inspection readiness checklist, identify one action per category that you will implement within 90 days. Each item below costs under €500 and requires no external contractors:

Category	Action	Done?
Infrastructure	Install differentiated bins: hazardous, plastic, organic waste — clearly labelled at all berth areas	<input type="checkbox"/>
Infrastructure	Purchase and position spill kits at fuel dock and all maintenance areas	<input type="checkbox"/>
Infrastructure	Add secondary containment (drip trays/bunds) to fuel and chemical storage areas	<input type="checkbox"/>
Monitoring	Start a basic water quality log — weekly visual check for colour, turbidity, surface films	<input type="checkbox"/>



Monitoring	Create a hull check-in inspection form and introduce it at berth registration this season	<input type="checkbox"/>
Monitoring	Set up an incident/near-miss reporting form and brief all staff on its use	<input type="checkbox"/>
Operations	Design and laminate a spill response procedure card — post it at the fuel dock	<input type="checkbox"/>
Operations	Run a 30-minute staff environmental briefing — record date, topics, and attendee signatures	<input type="checkbox"/>
Operations	Review waste fee structure to ensure disposal is incentivised, not penalised	<input type="checkbox"/>
Operations	Post Clean-Drain-Dry signage at the marina entrance and at the pump-out station	<input type="checkbox"/>



Self-Assessment Quiz

Test your understanding. Select your answer, then reveal the correct response below. Aim for 7 or more correct out of 10.

Question 1

What does the ERMAP formula Risk = L × S represent?

- a) Revenue minus Loss — a financial risk assessment
- b) Likelihood multiplied by Severity — a score from 1 to 25 that prioritises environmental risks
- c) Legal requirements multiplied by Standards — a regulatory compliance check
- d) Loading rate multiplied by Season — a seasonal pollution indicator

✓ **Correct Answer: b) Likelihood × Severity — a score from 1 to 25**

The formula scores each risk source on likelihood of occurrence (1–5) and potential severity of environmental consequence (1–5). Multiplied together, this gives a risk score between 1 and 25 that allows marinas to compare and prioritise risks across all six categories.

Question 2

Vessel blackwater discharge is rated L=4, S=5 in the ERMAP. What does this mean practically?

- a) It is a routine, manageable issue that can be monitored without urgent action
- b) It is a high-likelihood, maximum-severity risk — the single most critical item in the entire ERMAP
- c) It only applies to marinas with more than 100 berths
- d) It is a theoretical risk because most boat owners comply voluntarily

✓ **Correct Answer: b) High-likelihood, maximum-severity — the most critical ERMAP risk item**

L=4 means vessels with full holding tanks and no pump-out available will regularly discharge illegally. S=5 means the consequence is severe — pathogen contamination, eutrophication, long-term ecological harm. The combined score of 20 places this at the upper boundary of HIGH risk.

Question 3

Which score range requires 'immediate operational controls and management supervision'?

- a) 1–6 (Low)
- b) 6–12 (Medium)



- c) 12–20 (High)
- d) 1–12 (Low to Medium)

✓ **Correct Answer: c) 12–20 (High)**

The HIGH risk band (12–20) is defined as requiring immediate operational controls and management supervision. It represents the risk level where existing routine procedures are insufficient and specific interventions must be implemented without delay.

Question 4

The ERMAP recommends that secondary containment for hazardous liquid storage must be capable of holding what volume?

- a) 50% of the largest container
- b) The exact volume of the largest container
- c) At least 110% of the largest container volume
- d) A minimum of 200 litres regardless of container size

✓ **Correct Answer: c) At least 110% of the largest container volume**

The 110% rule provides a safety margin above the volume of the largest container to account for rain accumulation and incomplete containment. This is an environmental best-practice standard aligned with EU guidance for hazardous substance storage.

Question 5

In-water hull cleaning is rated HIGH risk (L=4, S=4). Why is the likelihood rated so high?

- a) Most boat owners clean their hulls at sea rather than in port
- b) In-water hull cleaning occurs regularly at most marinas during the boating season
- c) Hull cleaning only poses risk if antifouling paint is used
- d) The risk is high only if the marina has no filtration system

✓ **Correct Answer: b) In-water hull cleaning occurs regularly at most marinas during the boating season**

Hull cleaning is a standard boating maintenance activity that many owners perform at the berth. Without contained cleaning areas, paint particles, biocides, and sediment are released directly into the marina basin. The high likelihood reflects the frequency of this activity at active marinas.

Question 6

Why does the ERMAP classify 'management deficiencies' as a MEDIUM–HIGH environmental risk?

- a) Poor management directly pollutes water through administrative errors
- b) Unclear policies, undefined responsibilities, and insufficient training increase the likelihood of incidents across all other risk categories
- c) Management deficiencies only matter for ISO 14001 certification, not for environmental protection
- d) It is classified as LOW risk in most marina contexts

✓ **Correct Answer: b) Management deficiencies increase incident likelihood across all other categories**

Management deficiencies are a systemic risk multiplier. A marina with perfect physical infrastructure but no written procedures, no named environmental coordinator, and no staff training records is more likely to experience incidents across all six risk categories — and more likely to fail an inspection.

Question 7

What is the Clean-Drain-Dry protocol designed to prevent?

- a) Chemical contamination from cleaning products
- b) The introduction of invasive species through hull fouling, equipment, and residual water transfer
- c) Greywater discharge from vessel sinks and showers
- d) The spread of antifouling paint during hull maintenance

✓ **Correct Answer: b) Invasive species introduction through hull fouling and equipment transfer**

Clean-Drain-Dry is a biosecurity protocol: 'Clean' all equipment and hulls of visible material; 'Drain' all water from bilges, live wells, and ballast; 'Dry' equipment thoroughly before moving to a different water body. These three steps interrupt the primary pathways by which invasive species are transported between Baltic marina basins.

Question 8

Phase 1 of the ERMAP implementation roadmap covers the first 0–6 months. Which of the following is NOT a Phase 1 action?

- a) Formally adopting the ERMAP and assigning environmental roles
- b) Delivering staff training on key risks and emergency procedures
- c) Achieving ISO 14001:2015 certification
- d) Installing basic infrastructure such as spill kits, waste bins, and signage

✓ **Correct Answer: c) Achieving ISO 14001:2015 certification**

ISO 14001 certification is a Phase 3 (24+ months) objective. Phase 1 focuses on immediate, foundational actions that require minimal investment: adopting the plan, assigning roles, training

staff, and installing basic infrastructure. Certification requires a mature, documented, audited Environmental Management System.

Question 9

A marina manager says: 'Our marina is well-maintained and we've never had an incident — so we don't need written procedures.' What is the ERMAP's response to this position?

- a) This is acceptable — incident-free marinas are exempt from documentation requirements
- b) Written procedures are only required when an inspection is scheduled
- c) Most Baltic marina penalties are issued for missing documentation, not for active pollution events — absence of incidents does not reduce documentation obligations
- d) The manager is correct if the marina has fewer than 50 berths

✓ **Correct Answer: c) Missing documentation is the most common reason for penalties — not active pollution events**

The ERMAP explicitly addresses this misconception. Inspectors assess four elements: procedures, training records, visual order, and staff awareness. A physically clean, incident-free marina that cannot produce written procedures and training records will receive a compliance finding. Documentation is required preventively, not reactively.

Question 10

The ERMAP maps directly to ECOMARINAS certification. Which risk category corresponds to the 'Biodiversity & Habitat Protection' indicator?

- a) Plastic Pollution Management
- b) Water Quality Protection
- c) Invasive Species Prevention
- d) Additional Environmental Risks

✓ **Correct Answer: c) Invasive Species Prevention**

Biodiversity and habitat protection — the ECOMARINAS indicator — is most directly addressed by the Invasive Species Prevention risk category. Evidence required includes hull inspection forms, Clean-Drain-Dry signage, and documented protocols for reporting suspected invasive species sightings to environmental authorities.

Scenario Exercises

Apply the ERMAP framework to these realistic marina situations. Use the risk scoring method and the six risk categories to structure your thinking.

Scenario 1: The Risk Assessment

You have just become the new harbour master at a 65-berth marina on the Lithuanian coast. The marina has no written environmental procedures, no designated Environmental Coordinator, and no pump-out station. There is a fuel dock with a spill kit that has not been restocked since last season. The marina is adjacent to a Natura 2000 designated area. Using the Likelihood × Severity framework, identify the three highest-priority risks and specify one immediate Phase 1 action for each.

Consider:

- Which of the six risk categories are most relevant given this marina's characteristics?
- The adjacency to Natura 2000 — does this affect the severity scores for any risk categories?
- What is the single most urgent action given the missing pump-out station?

Scenario 2: The Inspection

An environmental inspector arrives unannounced on a Tuesday in July. It is peak season. She asks to see your written spill response procedure. You know there is a laminated card somewhere in the office but you cannot locate it immediately. She then asks one of your seasonal staff members: 'What do you do if a fuel spill occurs at the dock?' The staff member says they were not trained on this. The inspector notes both findings. Using the ERMAP's four inspection elements framework, describe what you should have in place before this inspector's next visit.

Consider:

- Which two of the four inspection elements (procedures, training records, visual order, staff awareness) were found deficient in this scenario?
- What specific documents and physical changes would address the inspector's findings?
- How do you ensure that seasonal staff — hired for a short season — receive adequate environmental briefing?

Scenario 3: The Budget Decision



Your marina board has approved €6,000 for environmental improvements before next season. You have identified five needs: (1) a pump-out station upgrade — €4,500, (2) spill kits and secondary containment — €350, (3) differentiated waste bins for the pontoons — €600, (4) a laminated procedure card set and signage — €80, (5) a staff environmental briefing day with external facilitator — €500. You cannot fund everything. How do you prioritise — and how do you justify your decision using the ERMAP risk scoring framework?

Consider:

- Which investments address HIGH-risk items in the ERMAP matrices?
- Which investment is disproportionately high-impact relative to its cost?
- Is there a combination of items 2, 3, 4, and 5 (total €1,530) that, together, addresses more inspection risk than item 1 alone?

Key Terms Reference

Term	Plain-Language Definition
ERMAP	Environmental Risk Management Action Plan — the structured, ISO 14001-aligned framework for identifying, assessing, and managing environmental risks at small marina level.
ISO 14001:2015	International standard for Environmental Management Systems. Provides the risk-based thinking approach that underpins the ERMAP methodology. Certification is a Phase 3 goal.
Risk Rating (L × S)	The ERMAP's risk scoring formula. Likelihood (1–5) × Severity (1–5) = score from 1 to 25 determining risk level (Low / Medium / High / Extreme).
Blackwater	Sewage from vessel toilets. Highest-risk wastewater category. Direct discharge prohibited within 3nm of coast under MARPOL Annex IV. Requires pump-out facilities.
Greywater	Wastewater from vessel sinks, showers, and galleys. Lower risk than blackwater but still carries nutrients and detergents. Managed through education and policy.
Secondary containment	Physical barrier (bund wall, drip tray) designed to hold at least 110% of the largest hazardous liquid container volume, preventing spills from reaching water.
Hull fouling	Accumulation of marine organisms on vessel hulls. Primary mechanism for transporting invasive species between Baltic marinas and water bodies.
Clean-Drain-Dry	Biosecurity protocol for preventing invasive species transfer: Clean equipment and hulls of visible organisms; Drain all water; Dry before moving to another water body.
Eutrophication	Nutrient overload in water (nitrogen, phosphorus) causing explosive algae growth, oxygen depletion, and fish death. Currently affects 97% of the Baltic Sea.
EMS	Environmental Management System — structured organisational framework for managing environmental obligations, monitoring performance, and achieving continuous improvement.



Phase 1 actions	Immediate (0–6 month) foundational steps: adopt ERMAP, assign roles, train staff, install basic infrastructure. Most cost under €500 individually.
ECOMARINAS indicator	A specific measurable aspect of marina environmental performance assessed in ECOMARINAS certification. Each indicator maps to one ERMAP risk category.

Module Complete

If you scored 7 or more in the quiz, you are well-prepared for the ERMAP workshop session and ready to build your marina's 90-day action plan.