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Being Prepared for Climate Change

A Workbook for Developing Risk-Based Adaptation Plans

EPA
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Vulnerability Assessment + Implementing an Action Plan

Climate Change Adaptation

A vulnerability assessment is an understanding of how climate change will affect an organization.

A VA is a ranked description of how climate changes would keep an organization from reaching its goals.

The VA tells you what your biggest risks are. An action plan tells what you will do about the risks.

Why risk-based plans?

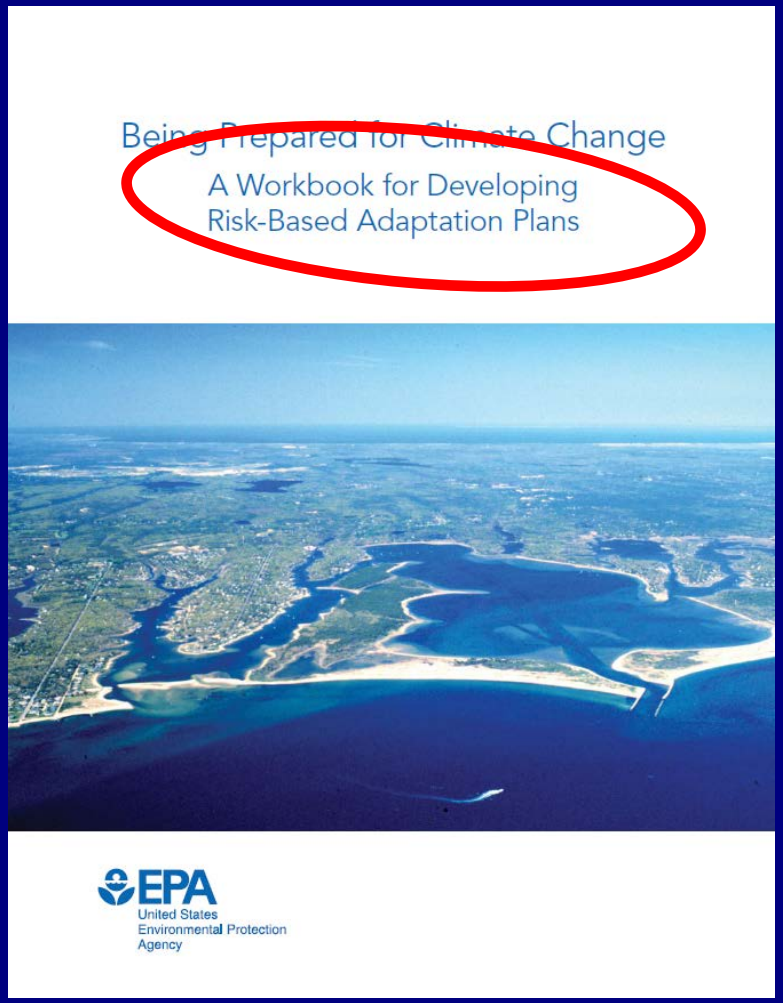
Risk management is about an organization.

Your organization's:

- Goals.
- Context.
- Decisions.

It clarifies your situation.

You get a better plan.



How do you decide what to do?

100+ discrete risks
from climate change.

(unfortunately, **5 × 6 × 4 > 100**)

How do you decide what to do if you don't have the resources to do everything you need to do?!

Vulnerability Assessment

1—Communication and Consultation

2—Establishing the Context for the Vulnerability Assessment

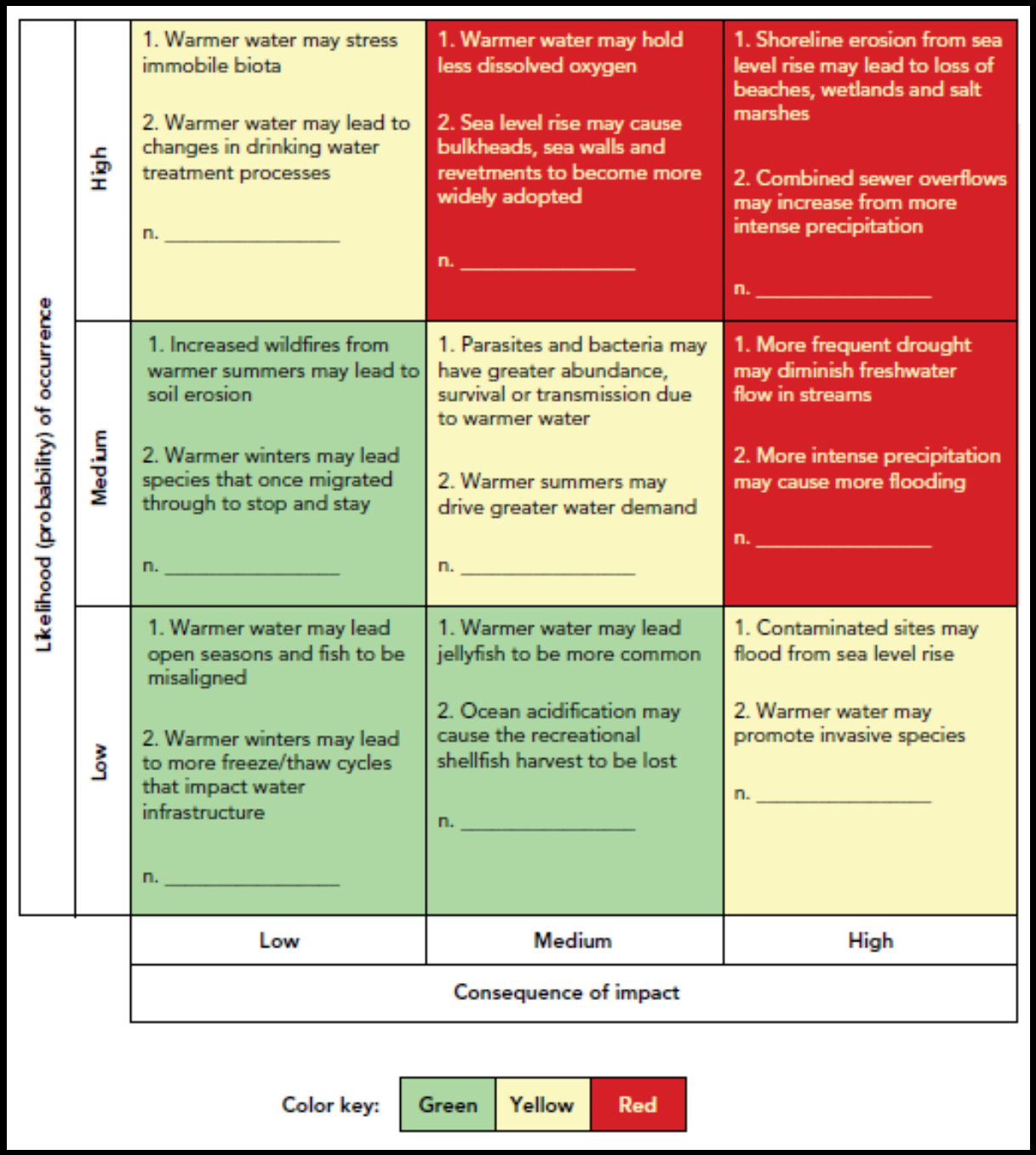
3—Risk Identification

4—Risk Analysis

5—Risk Evaluation: Comparing Risks

Risk evaluation

An example consequence/probability matrix.



Likelihood (probability) of occurrence	Consequence of impact: Low	Consequence of impact: Medium	Consequence of impact: High
High	1. Warmer water may stress immobile biota 2. Warmer water may lead to changes in drinking water treatment processes n. _____	1. Warmer water may hold less dissolved oxygen 2. Sea level rise may cause bulkheads, sea walls and revetments to become more widely adopted n. _____	1. Shoreline erosion from sea level rise may lead to loss of beaches, wetlands and salt marshes 2. Combined sewer overflows may increase from more intense precipitation n. _____
Medium	1. Increased wildfires from warmer summers may lead to soil erosion 2. Warmer winters may lead species that once migrated through to stop and stay n. _____	1. Parasites and bacteria may have greater abundance, survival or transmission due to warmer water 2. Warmer summers may drive greater water demand n. _____	1. More frequent drought may diminish freshwater flow in streams 2. More intense precipitation may cause more flooding n. _____
Low	1. Warmer water may lead open seasons and fish to be misaligned 2. Warmer winters may lead to more freeze/thaw cycles that impact water infrastructure n. _____	1. Warmer water may lead jellyfish to be more common 2. Ocean acidification may cause the recreational shellfish harvest to be lost n. _____	1. Contaminated sites may flood from sea level rise 2. Warmer water may promote invasive species n. _____

Color key: Green | Yellow | Red

Action Plan

Step 6—Establishing the Context for the Action Plan

Step 7—Risk Evaluation: Deciding on a Course

Step 8a—Finding Adaptation Actions

Step 8b—Selecting Ad. Actions

Step 9—Preparing and Implementing an Action Plan

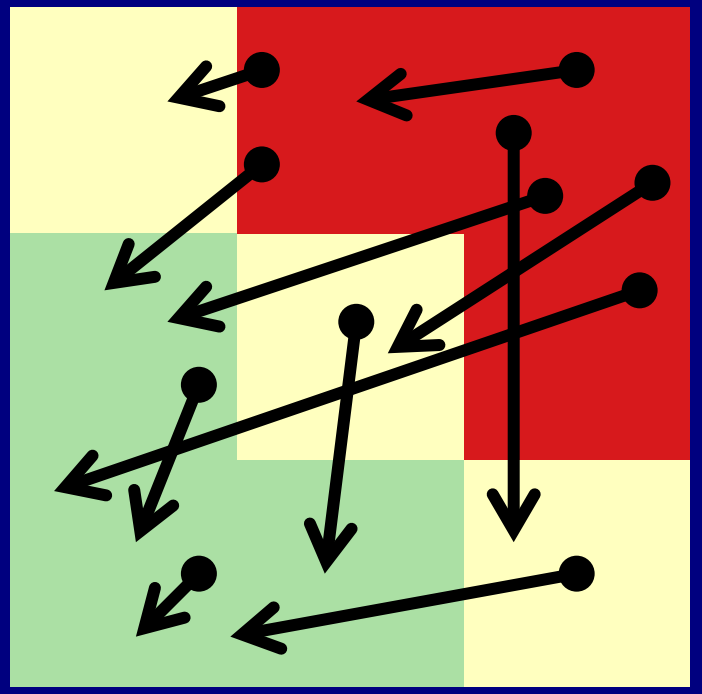
Step 10—Monitoring & Review

Mitigating actions

Risks are mitigated by actions that lower their likelihood or consequence.

When a risk is mitigated it would be re-plotted closer to the lower left.

Your aim is to have no red risks.



A risk-based climate change adaptation plan

Q: How do you decide what to do if you don't have the resources to do everything you need to do?

The vulnerability assessment points toward the biggest risks! The ones that are highly likely to occur and will have high consequences when they do.

The action plan points to the actions that reduce the most risk and don't have bad side effects.

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