Common Risk Issues: Identification and Resolution

Army Environmental Cleanup Workshop
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U.S. Army Environmental Center (USAEC)

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)

U.S. Army Corps of Engineers, Center of Expertise for Hazardous, Toxic and Radioactive Waste (USACE HTRW CX)

Agenda

- Problem statement
- Risk issues
- What are we doing to address the problem
- Problem examples
- Summary

Problem Statement

- **Risk assessments are not conducted consistently throughout the Army.**
- **Meeting the DPG goals requires that the Army reach RIP/RC at all sites by the end of FY2012.**
- **In order to ultimately reach RIP/RC, decision documents and RODs must be approved and signed off by the Army staff.**
- **USAEC, USACHPPM and the USACE HTRW CX have identified a number of issues that, if resolved earlier in the clean up process, could facilitate approval of the DDs and RODs.**

List of Risk Related Issues

- Human Health
  - Toxicity Value Hierarchy
  - Non-CERCLA hazardous substances in risk assessments
  - Risk/ARAR interplay
  - Risk from background
  - Assessing risk from lead in non-residential scenarios
  - Vapor intrusion

- Ecological Risk Assessment
  - Ecological relevance/valued ecological resources
  - Assessment endpoints – population health, reproduction
  - Population risk versus risk to individuals
  - Use of HQs in ecological risk assessments
  - Short term risk from remedy implementation

Addressing the Problem

- USAEC, USACHPPM, and the USACE HTRW CX identified issues that commonly occur but that are not being managed consistently
- The three organizations are identifying the appropriate path forward for each issue and developing two page white papers that lay out the Army position
- Installations should review the white papers and use them as the basis for the Army position in their risk assessments, Decision Documents and RODs
- If stakeholders challenge these positions , the installations should raise the issues up the chain of command as early in the program as possible to facilitate staffing of the Decision Document or ROD

Examples of Risk Issues

Human Health

- LUCs vs Unrestricted Land Use
- Development and Use of Cleanup Goals

Ecological

- Management of screening level ecological risk assessment results
- Ecological risk assessment planning

LUCs vs. Unrestricted Site Use

- **Issue**
  - Balancing the costs of attaining unrestricted land use versus implementing and maintaining land use controls

- **Policy**
  - DUSD(ES/CL) memo to components: ***Policy on Land Use Controls Associated with Environmental Restoration Activities***, 17 Jan 2001.
  - Components will plan, program, and budget for necessary funding...
  - Include in the FS when considering a remedy requiring a LUC:
    - Costs of implementing and maintaining the LUC

    AND

    - Costs to attain unrestricted site use

LUCs vs. Unrestricted Site Use

- Qualitative risk evaluation can suffice in the FS
- Clearly document the cost comparison of LUCs vs. unrestricted site use in the FS
- Decision on whether cost to cleanup to unrestricted use is acceptable must be coordinated with AEC restoration managers
- Decisions to cleanup to unrestricted site use:
  - -Should be based on sound and fully documented cost estimates
  - -Eliminate the need for 5 year reviews
- <u>Required information</u>
  - DDs and RODs must clearly show the cost comparison and document the rationale for cleaning up to unrestricted use.

Development and Use of Cleanup Goals for Human Health

- <u>Issue</u>

  Carryover of conservative methods to estimate risk and cleanup levels at later stages in the RI process

- <u>Potential Impacts</u>

  -cost (e.g. volume of area to cleanup and time spent)

  -mission

Factors in Calculating the Cleanup Goal

- Average concentration vs. maximum concentration
- Use of 10^{-4} vs. 10^{-6} risk levels
- RAL vs. RG

RG Calculation basics

- Concentrations that pose no unacceptable health threat
- Media Specific
- Used exposure assumptions at the Reasonably Maximum Exposed Individual
- Exposure area is based on the use of the area by the receptor
- Usually calculated at the 1E-6 risk or an HQ of 1 unless superseded by an ARAR

RAL basics

– EPA guidance
  - RGs are risk assessments in reverse:
    -they are site averages (same as the EPC in the forward Risk Assessment)
    -RGs are documented in the ROD
  - Post remediation EPC calculated by replacing high values with ND (or background) until risk goal is reached
  - Gives rise to a remedial action level (not to exceed threshold) (RAL) which is developed in the RD/RA
  - RAL > RG

Recommendations:

-Use more realistic assumptions (Not standard defaults)

- calculate average concentration over the exposure area with same parameters as the RA

- Risk threshold for cleanup is 10^{-4}; if required to cleanup for risk levels less than 10^{-4} coordinate with the restoration manager

-Develop RALs for cleanup vs. using RGs

Management of Screening Level Ecological Risk Assessment (SLERA) Results:

Balancing the Need for Further Study with the Cost of Site Remediation

Management of SLERA Results

- Issue

  Decisions to perform cleanups are being made based on conservative SLERA results

- Policy

  In the DERP, *Risk* must be demonstrated before funds can be allocated to cleanup

- Impact

  Unnecessary cleanup may be performed

RECOMMENDATIONS:

- Cleanups should not be based on SLERA results, unless it can be shown that the cleanup is more cost effective than further study.

- Costs should be clearly defined and documented in the FS.

- Elevate up the Army chain of command, to the Restoration Manager, before negotiations with the regulatory agencies on cleanup goals are finalized.

- Recommended Reading:

  A Guide to Screening Level Ecological Risk Assessment, US Army BTAG, April 2005.

http://aec.army.mil/usaec/cleanup/btag00.html

Ecological Risk Issues *or* Do We Need to Cleanup the Parking Lot to Protect Robins?

- **Issue**

  In early planning phases of the assessment, stakeholder agreement on management goals and valued ecological resources is not being reached or understood.

- **Potential Impact**

  -cost

  -time

  -inability to make risk management decisions

Ecological Risk Issues

- What warrants protection at the site?
- Does suitable habitat exist?
- Is anything ecologically relevant or valued?
- Is the site large enough to be relevant?
    - 2 acres or smaller, many states won't require evaluation

Recommended Reading:

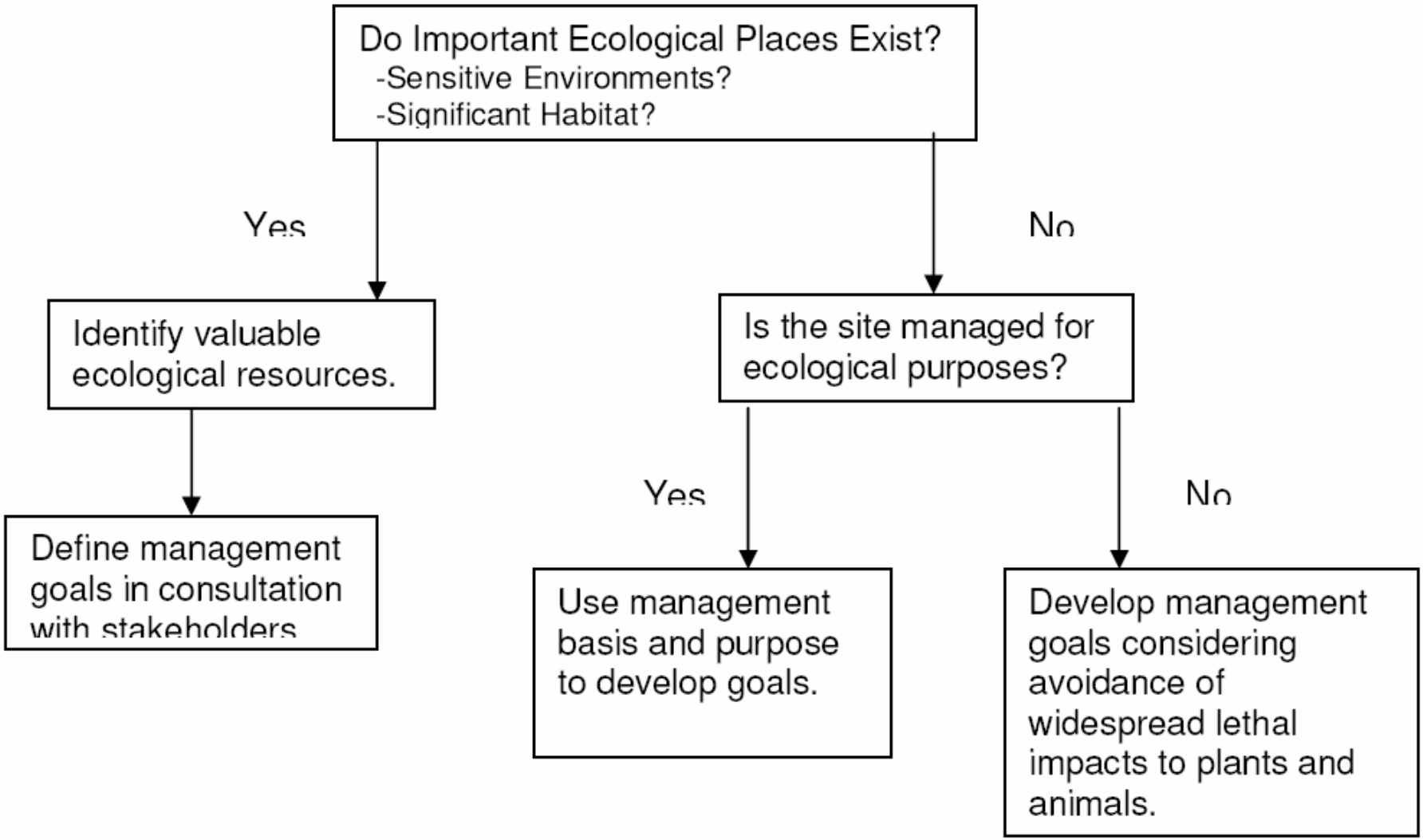
Army BTAG Technical Document for Ecological Risk Assessment: Process for Developing Management Goals

(2005) http://aec.army.mil/usaec/cleanup/btag00.html

Ecological Management Goals Focus the Ecological Risk Assessment

- Develop in the planning phase with stakeholder involvement
- Are there important ecological places present?
  - Sensitive environment, rare, or important habitat
  - Examples: Critical habitat for T&Es, Federal Wilderness Area, Wildlife Refuge
- Identify Valuable Ecological Resources
  - Population or community of species
- Write goals:
  - Maintain native fish populations
  - Sustain local forest interior bird populations

ERA Management Goal Development Process Summary



Summary

- **Inconsistency in management of risk issues across Army is impeding approval of DDs and RODs**
- **Short white papers on Army position will be posted on AEC website**
- **Raise up regulatory concerns about the Army position to AEC, through the RMs, as early as possible in the process**
- **Bottom Line – cleanup plans that are not consistent with Army position need to be clearly laid out and fully staffed prior to submittal of DDs and RODs**