4. Identify critical threats

Basic Practice Four

This document is a chapter from the Conservation Action Planning Handbook. The complete Handbook is available online at http://conserveonline.org/workspaces/cbdgateway/cap/practices.

The CAP Handbook is intended as a guidance resource to support the implementation of The Nature Conservancy's Conservation Action Planning (CAP) Process - a powerful instrument for helping practitioners get to effective conservation results. The CAP process is a key analytical method that supports Conservation by Design, the Conservancy's strategic framework for mission success.

Suggested citation: TNC, 2007. Guidance for Step 4: Identify Critical Threats in Conservation Action Planning Handbook. The Nature Conservancy, Arlington, VA.

Citation for complete document: TNC, 2007. Conservation Action Planning Handbook: Developing Strategies, Taking Action and Measuring Success at Any Scale. The Nature Conservancy, Arlington, VA.

This is a living document that will adapt and change as new information becomes available and as we hear from you about how to improve it. The most recent version will always be available at: http://conserveonline.org/workspaces/cbdgateway/cap/practices

For more information on Conservation Action Planning visit www.conservationgateway.org/cap.

Conservation Action Planning

Step 4: Identify Critical Threats

As summarized in TNC's CAP Overview of Basic Practices:

This step helps you to identify the various factors that immediately affect your project's focal targets and then rank them so that you can concentrate your conservation actions where they are most needed. Specific questions that this step answers include:

"What threats are affecting our targets?"
"Which threats are more of a problem?"

Expected Outputs

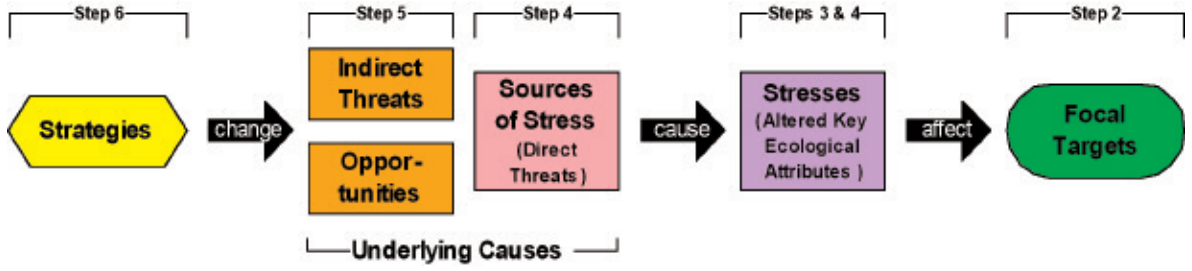
- A list of stresses for each focal conservation target.
- Ratings of the scope and severity of each stress.
- A list of sources of stress for each focal conservation target.
- Ratings of the contribution and reversibility for each source.
- A ranking of the sources of stress affecting each focal target and a determination of the critical threats affecting your overall project.

The Importance of Identifying Critical Threats

In many conservation situations, the biodiversity that we care about has either already been degraded, or is facing a series of threats that need to be countered by conservation actions. Threat ranking is a process wherein sources of stress, or direct threats, to your targets are first identified and then prioritized so that conservation actions can be directed where they are most needed. Threat ranking is important because in any given project area, there are always many activities that could be undertaken. The idea is to identify the most critical threats so that energy can be directed at them. Criteria-based ranking of threats provides an objective analysis of which threats are truly the critical threats. It also helps a team to lay out and document their assumptions so that they can be revisited at later dates.

Defining Critical Threats

As shown in the following diagram which follows the basic steps in the CAP process (step number corresponds to step in the CAP Basic Practices), the work of conservation ultimately involves having a project team uses strategies to achieve certain desired outcomes among factors (sources of stress, indirect threats and opportunities) that cause stresses to biodiversity targets.
Stresses are impaired aspects of conservation targets that result directly or indirectly from human sources (e.g., low population size, reduced extent of forest system). In essence stresses are



degraded key ecological attributes (Box 1). Sources of stress (also known as direct threats) are the proximate activities or processes that have caused, are causing or may cause the stresses (e.g., incompatible trawling or logging). For the most part, sources of stress are limited to human activities. Thus fires set by lighting or tropical storms that blow down large swaths of forest are not threats, but instead part of a natural (and often necessary) disturbance regime. There is a fine line, however, between a naturally occurring event, such as a fire set by lightning, and a human-caused threat, such as a fire set by a match or even increased intensity of fires due to forest management practices. In general, the latter two are sources of stress whereas the former is not. However, in special conservation situations -for example, when the last population of Javan rhinos is vulnerable to extinction from a "natural" tsunami -we would have to regard the tsunami as a threat to this species, even if it is not a threat to their forest habitat. Sources of stress can be currently active, likely to occur in the future (usually defined as within 10 years), or historical (Box 2).

Terms at a Glance

Stresses - Impaired aspects of conservation targets that result directly or indirectly from human activities (e.g., low population size, reduced extent of forest system; reduced river flows; increased sedimentation; lowered groundwater table level). Generally equivalent to degraded key ecological attributes (e.g., habitat loss).

Sources of Stress (Direct Threats) - The proximate activities or processes that directly have caused, are causing or may cause stresses and thus the destruction, degradation and/or impairment of focal conservation targets (e.g., logging).

Critical Threats - Sources of stress (direct threats) that are most problematic. Most often, Very High and High rated threats based on the Conservancy's threat rating criteria of their impact on the focal targets.

Critical threats are the sources of stress that are most problematic, as defined through the threat-rating process. Each stress is rated in terms of its likely scope and severity of impact on the target within the project planning horizon. Each source of stress is then rated in terms of its contribution and irreversibility and these ratings are combined to determine threat ratings.

When identifying and rating sources of stress, it is important to focus on direct threats - the proximate activities that directly cause the stresses to the conservation targets. The underlying causes (usually social, economic, political, institutional or cultural) that enable or otherwise contribute to the occurrence and/or persistence of direct threats (i.e., indirect threats) or that represent opportunities to reduce direct threats (i.e., opportunities) will be considered in *Step 5 Complete Situation Analysis* and *Step 6 Develop Strategies*.

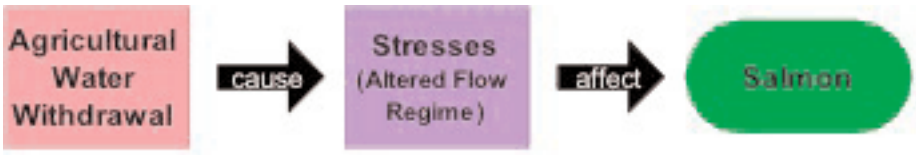
Box 1. The Relationship Between Stresses and KEAs

A key feature of the CAP methodology is to distinguish between stresses and sources of stress. As Bill Weeks described in Beyond the Ark (Weeks 19971):

The Nature Conservancy originally called the second step in its [site conservation] planning discipline "threats analysis." Project teams understandably adopted "threat" as the unit of analysis. The Conservancy concluded after a time, however, that its project teams would be better positioned to develop good strategies if they considered threats in two more narrowly defined steps. Team members are now advised to ask first what the ecological stresses to a system are - independent of the source of those stresses - before separately tracing those stresses to their sources. If we do not consciously alter our natural mode of expression, we will, for example, call a proposed road a threat in an estuarine system. We are then immediately inclined to the conclusion that we must stop construction of the road. Threat: road. Solution: stop road. However, if we separate the threat into stress and source, the stress isn't the road. The stress is, for example, loss of tidal flow. That formulation of stress inclines us to think, instead, of ways to keep tidal waters flowing through the pathway that is the proposed location of the road. Culverts may be the answer.

In the old 5-S system (the precursor to CAP), identification of stresses was particularly important as a means of understanding the disturbances that are likely to destroy, degrade or impair your targets and that result directly or indirectly from human sources (e.g., low population size, reduced extent of forest system, reduced river flows, increased sedimentation, lowered groundwater table level). But identification of stresses in a consistent fashion also tended to be a particularly challenging part of the 5-S process.

The current iteration of the CAP process has expanded the analysis of targets, adding in particular an emphasis on developing and understanding key ecological attributes. This innovation has led to some confusion over the relationship between stresses and key ecological attributes. The simplest way to think about it is that a stress is a degraded key ecological attribute -one that is outside its acceptable range of variation. As shown in the following diagram, the stress (altered flow regime) is not a threat in and of itself, but rather a manifestation of the source of stress (agricultural water withdrawal) on the target.



Most of the stresses acting on your targets can thus be identified by looking at which key ecological attributes are currently degraded or have a high potential to become degraded within the planning horizon of your project (e.g., the next 10 years).

1 Weeks, W.W. 1997. Beyond the ark: tools for an ecosystem approach to conservation. Island Press, Washington, D.C.

Box 2. Dealing With Historical Sources of Stress

An issue that often occurs in threat analyses is how to deal with cases in which a persistent stress exists, even though the original source of stress is no longer present - in other words, the stress comes from a "historical" source. Consider the following examples:

A. Levees are no longer constructed along a river but the remnant levees prevent the seasonal inundation of the floodplain - an important key attribute necessary for riparian forest recruitment. Levees need to be breeched to restore the flooding regime.
   Stress: Altered flood regime
   Source: Historical levee construction? Existing levees?

B. Illegal dumping of dirt has filled part of a wetland. A chain-link fence has been installed around the site that will prevent future dumping, but the fill needs to be removed to restore the wetland.
   Stress: Reduced wetland extent
   Source: Historical dumping? Fill dirt?

C. An accident at an industrial plant releases toxins into the downstream wetland resulting in the local extinction of many amphibian species. The plant has been permanently closed, but extensive clean-up and restoration work will be needed to restore the wetland.
   Stress: Altered species composition/structure
   Source: Historical industrial plant? Presence of toxins?

In each of these cases, the human-caused sources of stress have been abated, but persistent stresses are still affecting the targets. In each case, the degraded state of the conservation target will be reflected in reduced target viability ratings. As a result, traditional CAP guidance has held that these "restoration situations" should not be included in threats analyses, because the actual human-caused sources of stress have already been abated and their effects are adequately captured as altered key ecological attributes within the viability assessment. In the absence of other actual threats, traditional CAP guidance thus holds that these targets should be considered unthreatened (have dark green "low" threat ranks), even though the targets are clearly still stressed[2]. Practitioners then have to consult both the viability and threat summary tables during strategy development to make sure they are not missing any restoration situations.

There is, however, a grey area between "active" and "historical" sources of stress. In each of the above examples, one could make the case that the source of stress is the existing levees, the fill dirt or the presence of toxins and that these sources should be included in your threats analysis.

Ultimately, the point of assessing target status and doing threat ratings is to lead to good strategy selection. To this end, it's not worth spending a lot of time worrying about whether a source is "historical" or not. Your project team should define the stresses and sources that you feel are most important, make sure that restoration situations are expressed by altered key ecological attributes in the viability assessment, and then use your judgment to decide whether to also capture these persistent-stress situations within their threats analyses tables

2 Note that in the previous 5-S system, practitioners were instructed to mark these historical sources with a special tag that then was used to generate a separate summary table of "historical sources of stress" that could be consulted during strategy development. This practice caused confusion, however, so now current versions of the CAP Workbook do not support the historical source designation.

Commonly Used Methods

Since its inception, the CAP process has relied on a threat-rating methodology that involves identifying and rating stresses and then sources of stress on a target-by-target basis as described in this section. Recently, a "simplified" version of this methodology has been developed that focuses on directly rating the sources of stress (see *Opportunities for Innovation* below).

> As you go through this methodology, you can enter your work directly into the appropriate sections of the CAP Workbook. Or alternatively, if you are working in a large group setting, you can use a sticky tarp and index cards to capture your thinking (see Box 2 in *Step 5. Complete Situation Analysis*) and then transcribe it into the workbook.

1. Select a target and review its key ecological attributes

Threat identification is typically done on a target-by-target basis. You should thus select one of your focal conservation targets as a starting point (if this is your first time doing threat rating, you may wish to select a relatively simple and straightforward target). You should then review the key ecological attributes and indicators for this target that you identified in *Step 3. Assess Viability*.

2. Identify stresses / altered key ecological attributes

Discuss each key ecological attribute and determine which of these are sufficiently altered (or predicted to be sufficiently altered within the next 10 years) so as to be causing stress to your target. Consider the key ecological attributes that were rated Fair or Poor in the viability analyses and determine if the stresses that led to the degradation of the target are still active. Also consider those key ecological attributes that have a current status rating of Good or Very Good but are likely to degrade to Fair or Poor within your planning horizon if no conservation action is taken.

Enter these altered key ecological attributes into the CAP Workbook, on a flip chart (Box 3), or put each one on an index card linked to your target. To more clearly describe the altered key ecological attribute as a stress to a target, considering adding a verb to your key ecological attribute name (e.g., reduced population size, altered species composition). If you identify stresses to a target that don't match any of the key ecological attributes, you may have missed a "key" attribute of that target in your initial viability assessment and you should consider updating your viability table with this new information.

3. Apply stress-rating criteria and calculate stress rank

Rate each stress according to the criteria of scope and severity as defined in Box 3. If you are using the CAP Workbook, it will automatically calculate the Stress Rank for you. Or you can use the manual threat calculation guidance.[8] You should also record any important comments or notes that emerge during your discussion.

4. Identify sources of stress

For each stress, brainstorm specific direct threats that are the source of the stress. Enter each source of stress in the CAP Workbook, flipchart, or if you are using index cards, put each source/direct threat on a card and then link the card to the appropriate stress(es). As you go through this process, you may find it useful to review the IUCN-CMP classification of direct threats (Annex A) to see if there are any threats you have not considered.

8. A guide for manual threat calculation is available at
http://conserveonline.org/workspaces/cbdgateway/cap/practices/supportmaterials/bp4sm/TNC_Threat_Scoring

5. Apply source of stress rating criteria and calculate threat rank

Rate each source of stress according to the criteria of irreversibility and contribution as defined in Box 4. The CAP Workbook will automatically calculate the Threat to System and Overall Threat Ranks for you. Or you can use the manual threat calculations guidance. You should also record any important comments or notes that emerge during your discussion.

6. Repeat for your other targets

Go through steps 1-5 for your remaining targets.

7. Discuss threat summary

Look at the results of your threat rankings in the summary table in the workbook (see Bering Sea example in Box 5). See if there are any outcomes that do not match up with your team's intuition. If so, go back and review your stress and source rankings for the questioned outcome. Perhaps your rankings need to be adjusted, or perhaps your intuition was off the mark. Then make any appropriate adjustments. This analysis identifies your critical threats (the Very High and High ranked threats overall as well as threats that are Very High or High ranked for one target). If it's useful and feasible, you may also want to map your critical threats as shown in Box 5.

Box 3. Stress Ratings

Each stress is rated in terms of its scope and severity of its impact on the target as defined below.
If you are working with a group, you can copy the following table on a flip chart and fill it in for each stress. Or you can enter the ratings directly into the appropriate cells of the CAP Workbook.

Simple Stress Rating Form for Flip Charts
Target X.

Stress	Severity	Scope	Stress Rank
Stress 1	High	Very High	High
Stress 2			
Stress 3			
Etc.			

Rating Criteria for Stresses

Severity - The level of damage to the conservation target that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- **Very High:** The threat is likely to destroy or eliminate the conservation target over some portion of the target's occurrence at the site.
- **High:** The threat is likely to seriously degrade the conservation target over some portion of the target's occurrence at the site.
- **Medium:** The threat is likely to moderately degrade the conservation target over some portion of the target's occurrence at the site.
- **Low:** The threat is likely to only slightly impair the conservation target over some portion of the target's occurrence at the site.

Scope - Most commonly defined spatially as the geographic scope of impact on the conservation target at the site that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- **Very High:** The threat is likely to be widespread or pervasive in its scope and affect the conservation target throughout the target's occurrences at the site.
- **High:** The threat is likely to be widespread in its scope and affect the conservation target at many of its locations at the site.
- **Medium:** The threat is likely to be localized in its scope and affect the conservation target at some of the target's locations at the site.
- **Low:** The threat is likely to be very localized in its scope and affect the conservation target at a limited portion of the target's location at the site.

Example of Stress Rating – Adapted from the TNC-WWF Bering Sea Project

4	Target: Sea Ice Ecosystem				
Stresses – Altered Key Ecological Attributes		Severity	Scope	Stress	User Override
1	Reduced population size (all sea ice spp)	High	Very High	High	
2	Loss of polar bear denning sites on land	Low	Medium	Low	
3	Reduced sea ice habitat integrity	Very High	Very High	Very High	
4	Degraded animal condition (all sea ice spp)	Medium	Medium	Medium	

Box 4. Source of Stress Ratings

Each source of stress is rated in terms of its irreversibility and contribution as defined below. If you are working with a group, you can copy the following table on a flip chart and fill it in for each source of stress. Or you can enter the ratings directly into the appropriate cells of the CAP Workbook.

Simple Source of Stress Rating Form for Flip Charts

Source	Stress 1	Stress 2	Stress 3	Etc.
Threat A				
Contribution	High	Very High		
Irreversability	Medium	Medium		
Threat B				
Contribution			High	
Irreversibility			Low	
Etc.				

Rating Criteria for Stresses

Contribution - The expected contribution of the source, acting alone, to the full expression of a stress (as determined in the stress assessment) under current circumstances (i.e., given the continuation of the existing management/conservation situation).

- **Very High**: The source is a very large contributor of the particular stress.
- **High**: The source is a large contributor of the particular stress.
- **Medium**: The source is a moderate contributor of the particular stress.
- **Low**: The source is a low contributor of the particular stress.

Irreversibility - The degree to which the effects of a source of stress can be restored.

- **Very High**: The source produces a stress that is not reversible (e.g., wetlands converted to a shopping center).
- **High**: The source produces a stress that is reversible, but not practically affordable (e.g., wetland converted to agriculture).
- **Medium**: The source produces a stress that is reversible with a reasonable commitment of resources (e.g., ditching and draining of wetland).
- **Low**: The source produces a stress that is easily reversible at relatively low cost (e.g., off-road vehicles trespassing in wetland).

Example of Source of Stress Ratings - Adapted from the TNC-WWF Bering Sea Project
Stress 1 = Reduced pop size, **Stress 2** = Loss of polar bear denning,
Stress 3 = Reduced sea ice integrity, **Stress 4** = Degraded animal condition

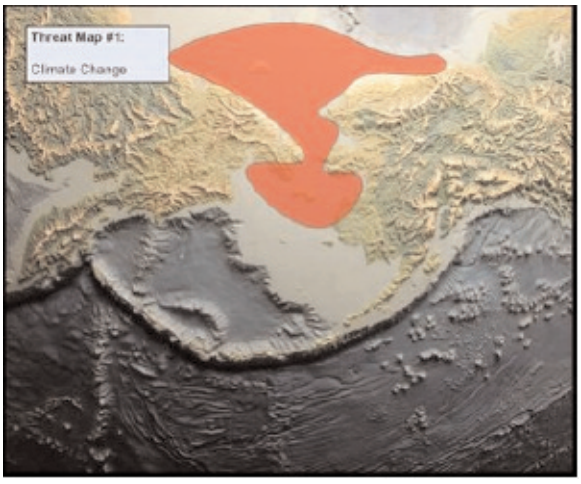
Threats - Sources of Stress **Threat to System Rank**

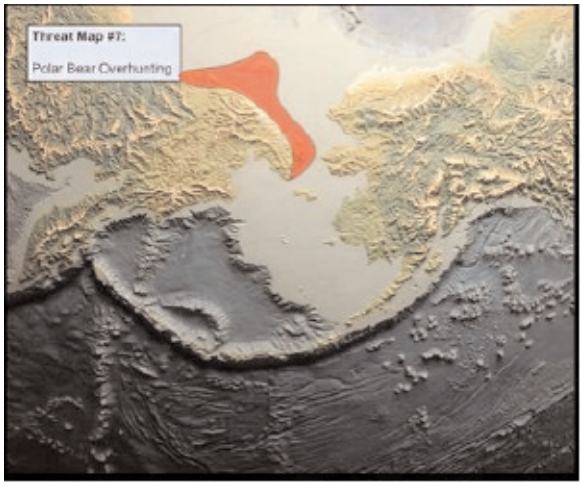
			Stress 1	Stress 2	Stress 3	Stress 4	
1	Climate Change	Contribution	Very High	Low	Very High	Very High	Very High
		Irreversibility	Very High	Very High	Very High	Very High	
		Source	Very High	Medium	Very High	Very High	
		Combined Rank	High	Low	Very High	Medium	
2	DLP killings (polar bears)	Contribution	Medium				Medium
		Irreversibility	Medium				
		Source	Medium	-	-	-	
		Combined Rank	Medium	-	-	-	
3	Overhunting	Contribution	High				Medium
		Irreversibility	Medium				
		Source	Medium	-	-	-	
		Combined Rank	Medium	-	-	-	

Box 5. Example of a Threat Rating Summary and Threat Maps

This example is adapted from the TNC-WWF Bering Sea Project. Note that threat maps are optional in the standard CAP process.

Summary of Threats to Targets **Project-specific threats**	Seabirds	Pinn-ipeds	Pelagic Fish	Sea Ice Eco-system	Sea Otter	Whales	Coral & Sponge Gardens	Bottom Dwelling Fish & Crab	Overall Threat Rank
Climate Change	High	High	High	V High	V High			High	V High
Excessive predation					V High				High
Oil spill	High	Medium	Medium	Medium					High
Competition with fisheries	High	High							High
Overfishing			Medium					High	Medium
Fisheries							High		Medium
Introduced predators	High								Medium
Whaling (historic)						High			Medium
Contaminants	Medium	Medium							Medium
Fishing bycatch, mortality	Medium		Medium						Medium
Fishing gear damage								Medium	
Aquaculture			Medium						
Roads & Infrastructure	Medium								
DLP killings (polar bears)				Medium					
Overhunting				Medium					
Threat Status for Targets and Site	High	High	Medium	High	V High	Medium	Medium	High	V High





Opportunities for Innovation

- **Adjusting the Time Frame for Threat Ratings** - As outlined in the methods section, practitioners are asked to rate scope and severity of threats "within 10 years under current circumstances (i.e., given the continuation of the existing situation)." This 10-year planning horizon was selected as a practical time frame from a management planning perspective. Certain threats, such as global climate change or invasive species, however, may not fully express themselves over a 10-year time frame. To this end, practitioners may wish to consider a longer time horizon for some threats if appropriate but should be sure to document their decisions. Over time, we may be able to arrive at consensus for the time frames for various threats.

- **Dealing with High Impact/Low Probability Threats Where "a Stitch in Time Saves Nine"** - The current threat ratings tend to prioritize existing threats that are obviously causing harm to biodiversity or threats that have a high likelihood of causing problems. However, some of the most cost-effective conservation actions are those aimed at stopping threats that are not obvious now and/or not likely to happen, but have the potential to cause huge problems down the road. Classic examples might be working to prevent catastrophic spills from oil tankers, or early detection and elimination of a potentially devastating invasive species or buying land while it is still relatively inexpensive and far ahead of the development frontier. We need to figure out a way to flag these threats where action today could lead to big savings in the future so they can be considered during the strategy development process.

- **Enhancing the Classification of Standard Threat Names** - The IUCN and the Conservation Measures Partnership have developed a standard classification of direct threats. This classification is in a hierarchical structure and is currently "comprehensive" at the highest levels. It is not complete, however, at lower levels. Over time, it would be useful to develop these lower levels so that conservation practitioners have a standard nomenclature.

- **Improving Spatial Representation of Threats** - Many threats are not evenly distributed on the landscape. As a result, it is important to create spatial maps of threats -especially for teams managing a large project area. Many practitioners have already developed map layers of threats such as roads, agricultural holdings or invasive plants. It would be good to develop ways of sharing these layers across projects. It would also be interesting to figure out how to map threats that have a less obvious spatial manifestation.

- **Developing a Simplified Threat-Rating Procedure** - Over the past few years, several groups have been experimenting with a simplified threat rating procedure that involves identifying and then rating the direct threats without dividing them into stresses and sources of stress. This method is now supported in the CAP Workbook. The basic procedure is:

    1. **Select a Target and Review its Key Ecological Attributes**. Threat identification is typically done on a target-by-target basis. You should thus select one of your focal conservation targets as a starting point (if this is your first time doing threat rating, you may wish to select a relatively simple and straightforward target). You should then review the key ecological attributes and indicators for this target that you identified in *Step 3. Assess Viability*.

2. **Identify Direct Threats (Sources of Stress)**. Brainstorm specific direct threats (also known as sources of stress) that are currently causing, or are likely to cause within your planning horizon, significant degradation of key ecological attributes to one or more of the conservation targets. As you go through this process, you may find it useful to review the IUCN-CMP classification of direct threats (http://conservationmeasures.org/CMP/Site_Docs/IUCN-CMP_Unified_Direct_Threats_Classification_2006_06_01.pdf) to see if there are any direct threats you have not considered and to make sure that you are not including any stresses in your list. Capture the anticipated impacts to the target by linking the direct threat to the key ecological attributes that will be altered by the threat. If you are using the CAP Workbook, a pop-up menu allows you to link the threat to the key ecological attribute(s) that the threat affects. If using a sticky board, you can put each threat on a card and then link it to the target(s), showing the appropriate key ecological attribute if it is helpful to show this detail.

3. **Apply Rating Criteria and Calculate Threat Rank**. Rate each direct threat according to the criteria of scope, severity, and irreversibility as defined in Boxes 6 and 7. The CAP Workbook will automatically calculate the Threat to System and Overall Threat Ranks for you. Or you can use the manual threat calculations guidance. You should also record any important comments or notes that emerge during your discussion.

4. **Repeat for Your Other Targets**. Go through steps 1-3 for your remaining targets.

5. **Discuss Threat Summary**. Look at the results of your threat rankings in the summary table in the workbook. (Whether you use the Stress/Source of Stress or Simple Threat Rating Method, you should end up with a summary table that looks like the one in Box 5.) See if there are any outcomes that do not match up with your team's intuition. If so, go back and review your rankings for the questioned outcome. Perhaps your rankings need to be adjusted, or perhaps your intuition was off the mark. Then make any appropriate adjustments. This analysis identifies your critical threats (the Very High and High ranked threats overall as well as threats that are Very High or High ranked for one target). If it's useful and feasible, you may also want to map your critical threats as shown in Box 5.

Box 6. Simplified Threat Ratings

Each direct threat (source of stress) is rated in terms of its scope, severity, and irreversibility of its impact on the target as defined below. If you are working with a group, you can copy the following table on a flip chart and fill it in for each source of stress. Or you can enter the ratings directly into the appropriate cells of the CAP Workbook.

Simple Threat Rating Form for Flip Charts
Target X.

Threat	Severity	Scope	Irreversibility
Threat 1	High	Very High	Low
Threat 2			
Threat 3			
etc.			

Rating Criteria for Sources of Stress / Direct Threats

Severity - The level of damage to the conservation target that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- **Very High:** The threat is likely to destroy or eliminate the conservation target over some portion of the target's occurrence at the site.
- **High:** The threat is likely to seriously degrade the conservation target over some portion of the target's occurrence at the site.
- **Medium:** The threat is likely to moderately degrade the conservation target over some portion of the target's occurrence at the site.
- **Low:** The threat is likely to only slightly impair the conservation target over some portion of the target's occurrence at the site.

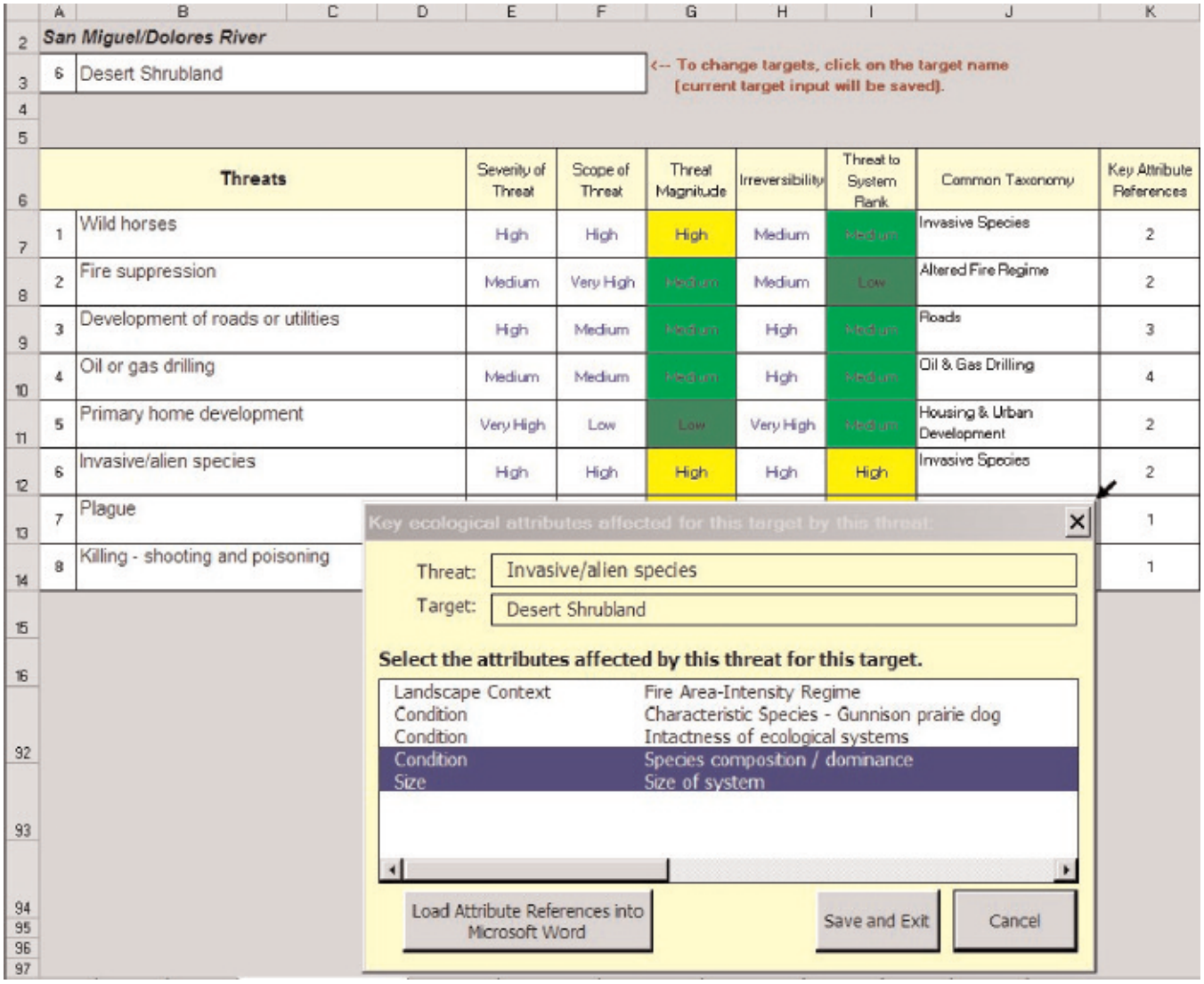
Scope - Most commonly defined spatially as the geographic scope of impact on the conservation target at the site that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- **Very High:** The threat is likely to be very widespread or pervasive in its scope, and affect the conservation target throughout the target's occurrences at the site.
- **High:** The threat is likely to be widespread in its scope and affect the conservation target at many of its locations at the site.
- **Medium:** The threat is likely to be localized in its scope and affect the conservation target at some of the target's locations at the site.
- **Low:** The threat is likely to be very localized in its scope and affect the conservation target at a limited portion of the target's location at the site.

Irreversibility - The degree to which the effects of a direct threat can be restored.

- **Very High:** The effects of the threat are not reversible (e.g., wetlands converted to a shopping center).
- **High:** The effects of the threat are reversible, but not practically affordable (e.g., wetland converted to agriculture).
- **Medium:** The effects of the threat are reversible with a reasonable commitment of resources (e.g., ditching and draining of wetland).
- **Low:** The effects of the threat are easily reversible at relatively low cost (e.g., off-road vehicles trespassing in wetland).

Box 7. Example of Simple Threat Rating



San Miguel/Dolores River

6 Desert Shrubland

<-- To change targets, click on the target name (current target input will be saved).

	Threats	Severity of Threat	Scope of Threat	Threat Magnitude	Irreversibility	Threat to System Rank	Common Taxonomy	Key Attribute References
1	Wild horses	High	High	High	Medium	Medium	Invasive Species	2
2	Fire suppression	Medium	Very High	Medium	Medium	Low	Altered Fire Regime	2
3	Development of roads or utilities	High	Medium	Medium	High	Medium	Roads	3
4	Oil or gas drilling	Medium	Medium	Medium	High	Medium	Oil & Gas Drilling	4
5	Primary home development	Very High	Low	Low	Very High	Medium	Housing & Urban Development	2
6	Invasive/alien species	High	High	High	High	High	Invasive Species	2
7	Plague							1
8	Killing - shooting and poisoning							1

Key ecological attributes affected for this target by this threat:

Threat: Invasive/alien species

Target: Desert Shrubland

Select the attributes affected by this threat for this target.

Landscape Context	Fire Area-Intensity Regime
Condition	Characteristic Species - Gunnison prairie dog
Condition	Intactness of ecological systems
Condition	Species composition / dominance
Size	Size of system

Load Attribute References into Microsoft Word

Save and Exit

Cancel

Resources and Tools

Basic guidance and examples for identifying critical threats can be found in the following sources:

IUCN and CMP. 2006. Unified Classification of Direct Threats, Version 1.0.
www.conservationmeasures.org

Salafsky, Nick, Dan Salzer, Jamison Ervin, Tim Boucher, and Wayne Ostlie. 2003. Conventions for Defining, Naming, Measuring, Combining, and Mapping Threats in Conservation: An Initial Proposal for a Standard System.
http://www.fosonline.org/images/Documents/Conventions_for_Threats_in_Conservation.pdf