

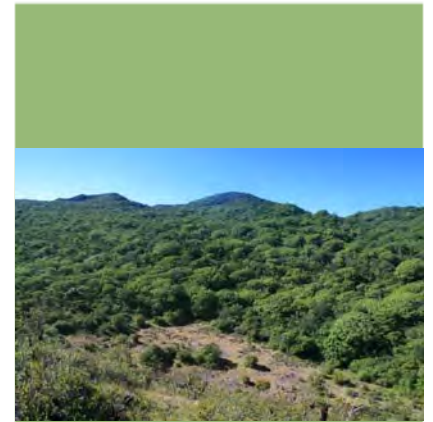
Gap Analysis in Samoa

Preliminary Findings

Presented by
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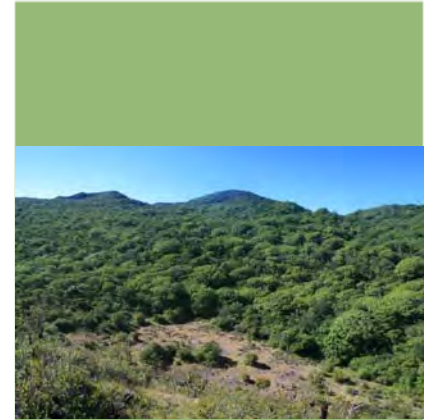


May 6, 2009



Outline

- What is a gap analysis?
- Steps in a gap analysis
- Samoa's NBSAP and global conservation commitments
- KBAs as a strategic way to identify and map priority biodiversity areas
- Preliminary findings of the gap analysis
- Questions for Discussion

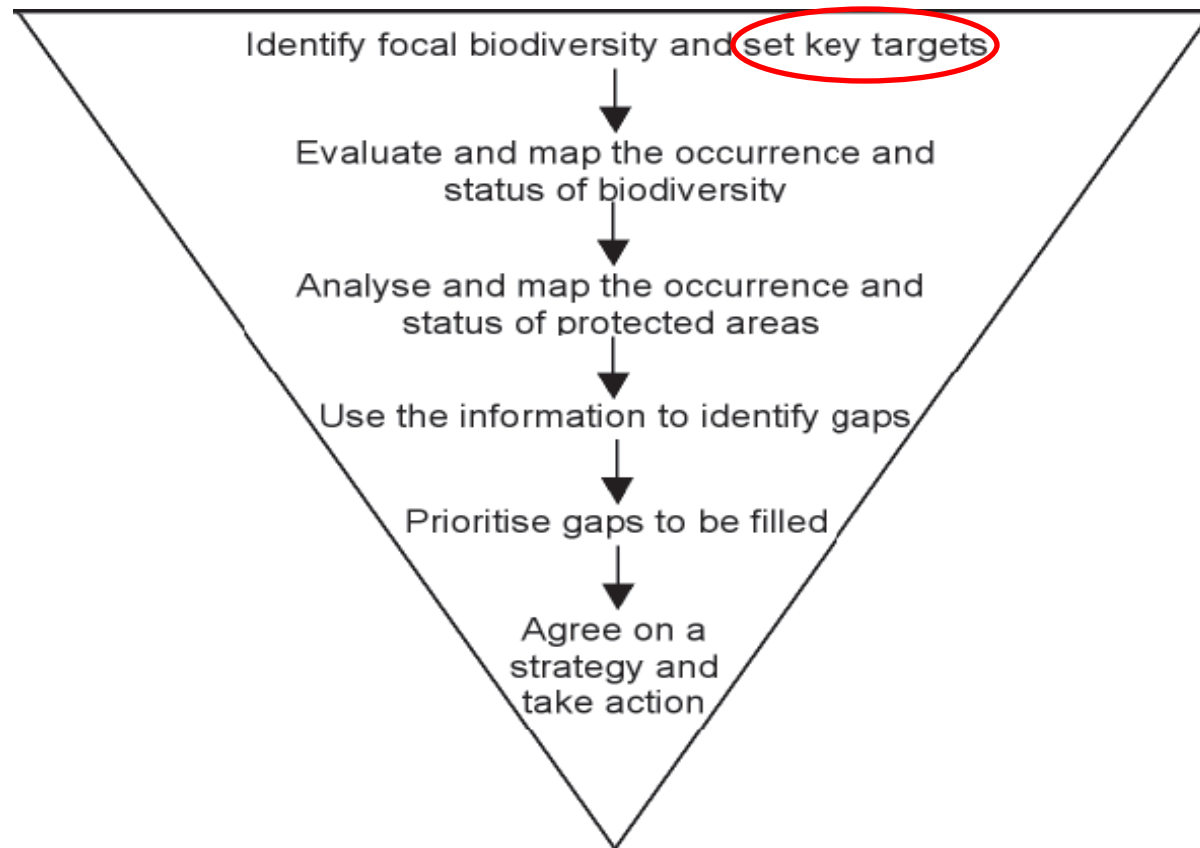


What is a Gap Analysis?



- **A gap analysis is an analysis of how effective our current PA network is in conserving our biodiversity**
- **Essentially the gap analysis is an overlay of the ideal set of conservation areas on the current PA network to see where the gaps are**
- **Why do a gap analysis?**
 - I. **To promote the strategic expansion of the existing PA network in order to meet agreed NBSAP and CBD commitments**
 - II. **To strengthen and consolidate the management of existing PA networks**
 - III. **To fill in the information gaps required to inform i) and ii).**

Steps in a gap analysis



Samoa's NBSAP sets a broad target...



Objective 2: To enhance the management of existing PAs and establish new ones to increase coverage of PAs to 15% and achieve a full representation of Samoa's ecosystems

But how do we achieve this and by when...?

National and Global Commitments that the Gap Analysis supports

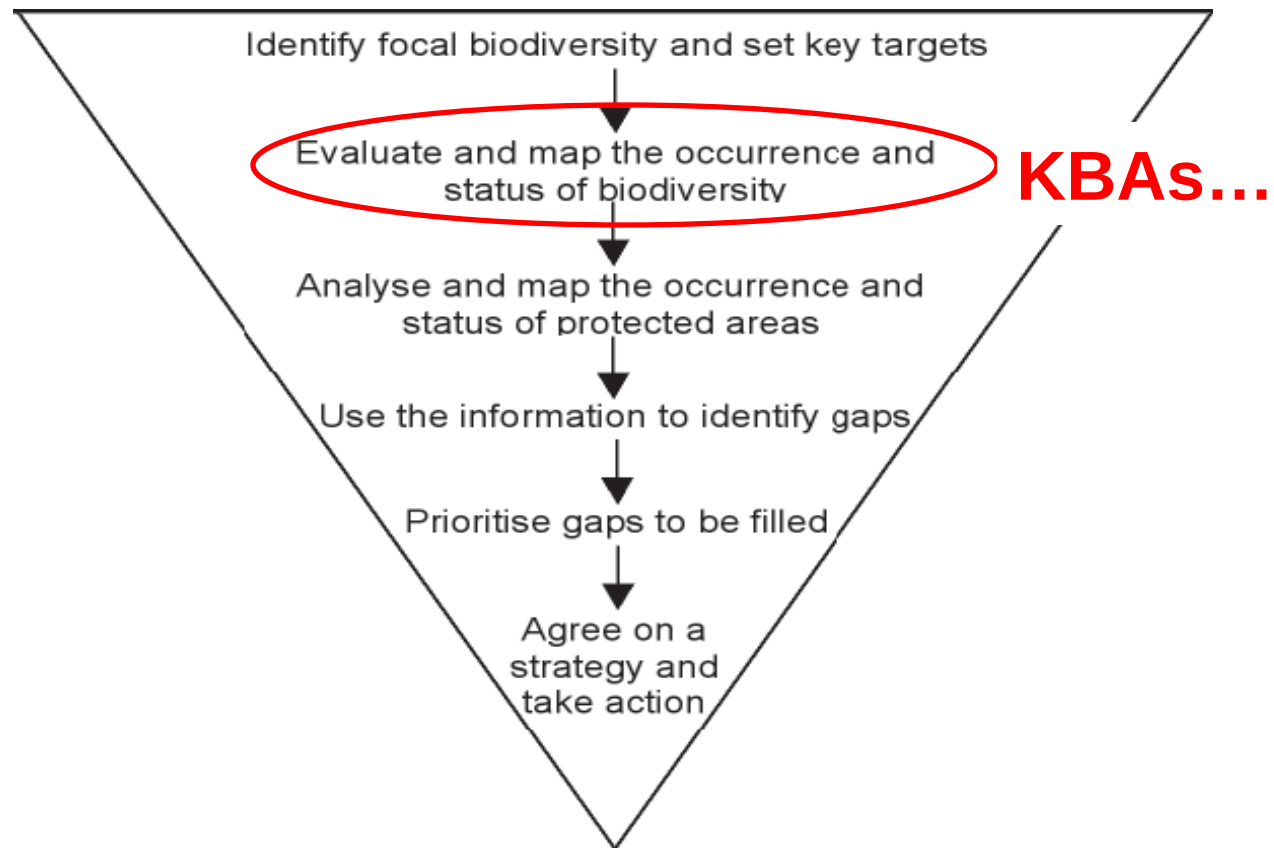
Theme	SBSAP Commitments	CBD Commitments
1. Species conservation	<i>Objective 1: To enhance the status of native and other important species in Samoa through effective conservation programs</i> <i>Objective 3: To ensure the sustainable use and management of species for social and economic development</i>	IBPOW Target 2.1: Populations of island species of selected taxonomic groups restored, maintained, or their decline substantially reduced IBPOW Target 2.2: Status of threatened island species significantly improved IBPOW Target 3.1: Genetic diversity of crops, livestock, and other valuable island species conserved, and associated indigenous and local knowledge maintained IBPOW Target 4.3: No species of wild flora and fauna on islands is endangered by international trade
2. Establishment and management of Protected Areas	<i>Objective 2: To enhance the management of existing PAs and establish new ones to increase coverage of PAs to 15% and achieve a full representation of Samoa's ecosystems</i> <i>Objective 3: To develop and effectively manage programs that promote the sustainable use of Samoa's ecosystems</i>	PAPOW Target 1.1: By 2010, terrestrially and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established PAPOW Target 1.2: By 2015, all protected areas and protected area systems are integrated into the wider land- and seascape, and relevant sectors, by applying the ecosystem approach IBPOW Target 1.1: By 2010 at least 10% of each of the island ecological regions effectively conserved. IBPOW Target 1.2: By 2010 areas of particular importance to biodiversity are protected IBPOW Target 5.1: The Rate of loss and degradation of natural habitats in islands significantly decreased

Samoa Gap Analysis Project Background



- **Collaborative project between MNRE, SPREP and CI to help Samoa implement its POWPA and achieve Samoa BSAP and CBD goals**
- **Project started in March 2008 and will finish in September 2009**
- **Project staff:**
 - **Terrestrial- Natasha Doherty (MNRE) and James Atherton (CI)**
 - **Marine –Juney Ward (MNRE), Sue Taei (CI) and Paul Anderson (SPREP)**
- **Key deliverable = “Priority Sites for Conservation in Samoa” and description of the conservation measures needed to conserve these sites**

Steps in a gap analysis



**KBAs are a strategic way to
identify our priority sites for
conservation**



**K.B.A =
Key Biodiversity Area**

*Sites that contain healthy
populations of globally
threatened species, restricted
range species or other species
of conservation concern*



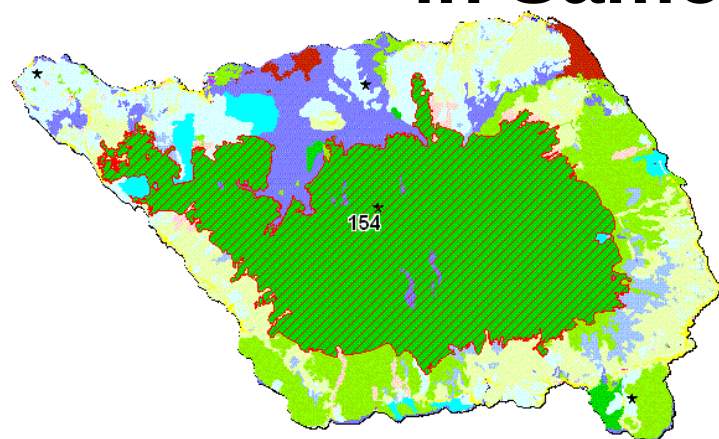
**Manumea = endemic
and endangered**

***Given limited \$\$ available we must focus on the
species and sites most at risk from extinction***

Threatened Samoan Terrestrial Species (IUCN Redlist)

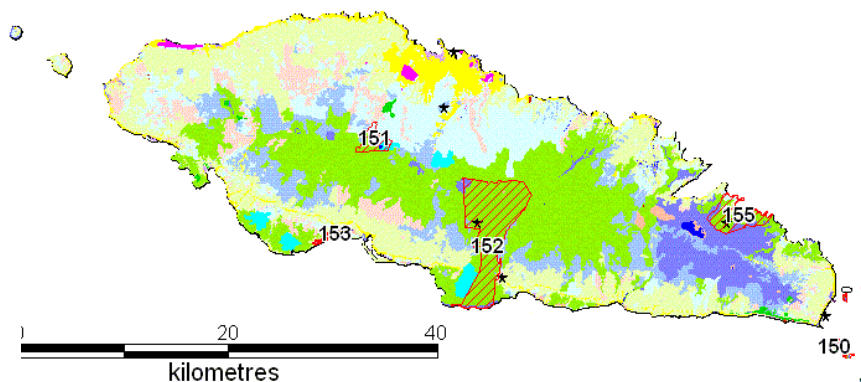


Terrestrial Key Biodiversity Areas in Samoa



Total coverage of 6 terrestrial
KBAs = 78,000 ha

27% Samoa's Land Area

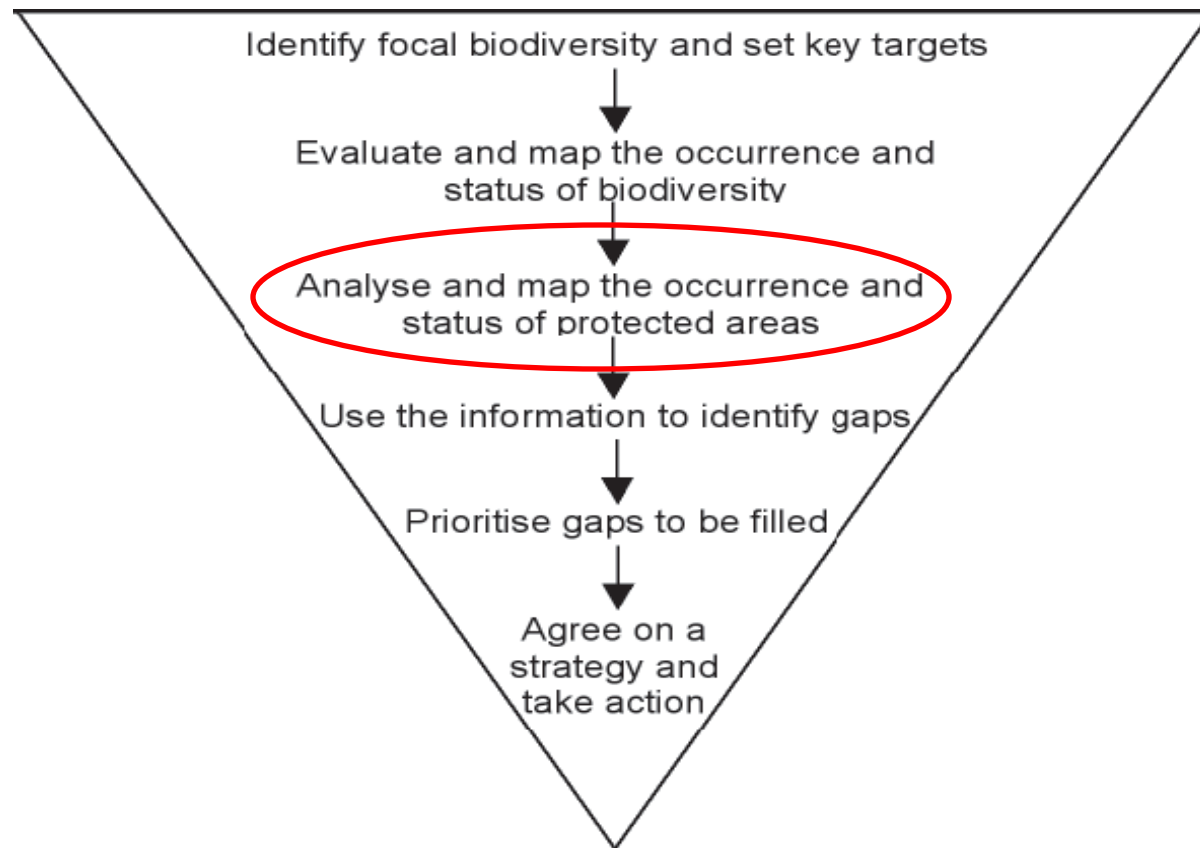


Map Prepared By:

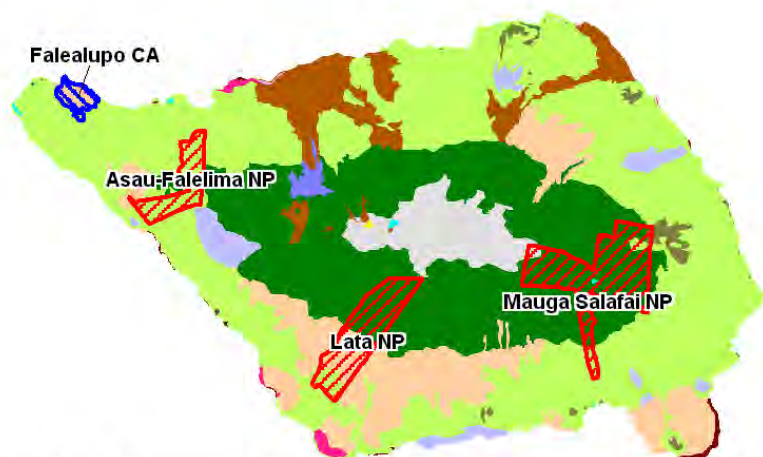


SITE_CODE	SITE_NAME	DELINEATION_LOGIC	REDLIST_SPECIES
152	O'le Pupu Pue NP	Nat Park boundary	Clinostigma samoense; Didunculus strigirostris; Drymophloeus samoensis; Gymnomyza samoensis; Thaumetodon hystericelloides
155	Uafato-Tiavea Coastal Forest	Approx CA boundary	Clinostigma samoense; Didunculus strigirostris; Gallicolumba stairi; Gymnomyza samoensis; Intsia bijuga; Myiagra albigula; Pteropus samoensis
150	Aleipata Marine Protected Area	Aleipata island coastline	Chelonia mydas; Eretmochelys imbricata; Gallicolumba stairi; Numenius tahitiensis
153	Sa'anapu-Sataoa Conservation Area	Mangrove Area (from Samoa API)	Chelonia mydas; Eretmochelys imbricata; Myiagra albigula
154	Savaii Lowland and Upland Forest	Medium Forest Area (from Samoa API)	Clinostigma samoense; Didunculus strigirostris; Drymophloeus samoensis; Gallinula pacifica; Gymnomyza samoensis; Intsia bijuga; Myiagra albigula
151	Lake Lanotoo National Park	Nat Park Bdry	Clinostigma samoense; Didunculus strigirostris; Drymophloeus samoensis; Pteropus samoensis; Thaumetodon hystericelloides

Steps in a gap analysis

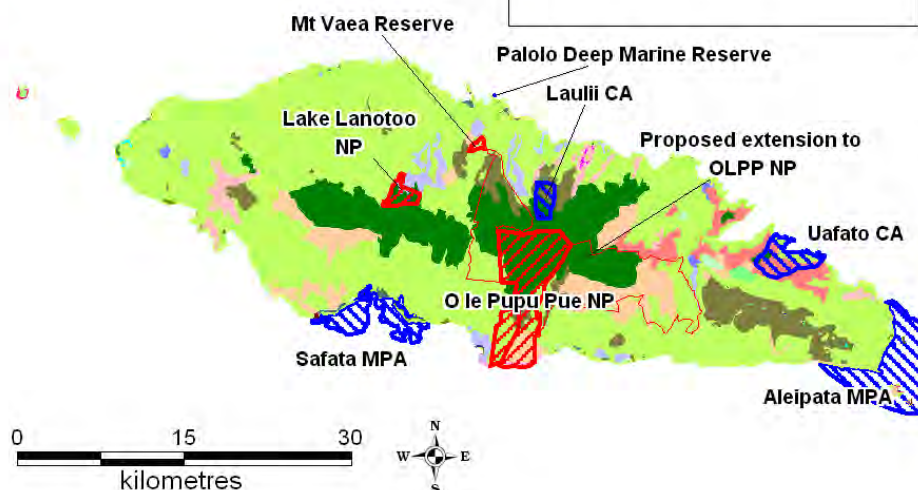


Samoa National Parks, Reserves, MPAs and Community Conservation Areas



Name_of_site	Conservation_Type	Area_Ha
Falealupo CA	Community Conservation Area	722.166
Uafato CA	Community Conservation Area	1,161.37
O le Pupu Pue NP	National Park/Reserve	4,230.62
Mt Vaea Reserve	National Park/Reserve	89.1303
Saanapu-Sataoa CA	Community Conservation Area	52.8378
Asau-Faleluma NP	National Park/Reserve	1,887.61
Lata NP	National Park/Reserve	3,731.98
Mauga Salafai NP	National Park/Reserve	5,973.59
Lake Lanotoo NP	National Park/Reserve	469.952
Forestry Site	National Park/Reserve	768.64
Laulii CA	Community Conservation Area	400
Proposed extension to NP	National Park/Reserve	10,000

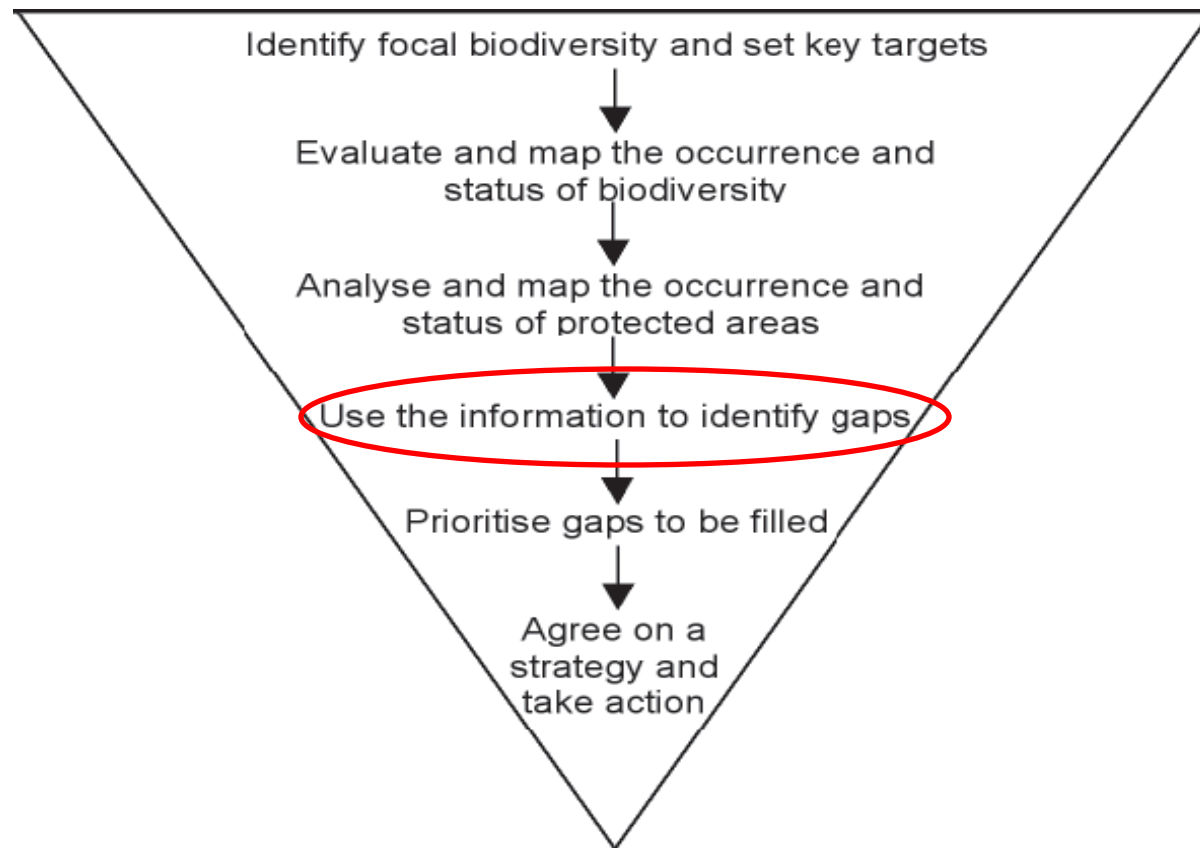
Name_of_site	Conservation_Type	Area_Ha
Aleipata MPA	Marine Protected Area	4,255
Safata MPA	Marine Protected Area	1,845
Palolo Deep Marine Reserve	Marine Protected Area	22



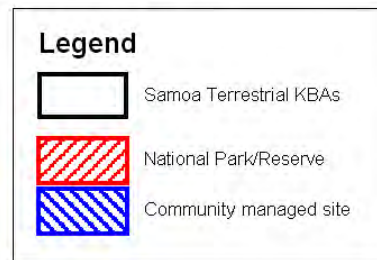
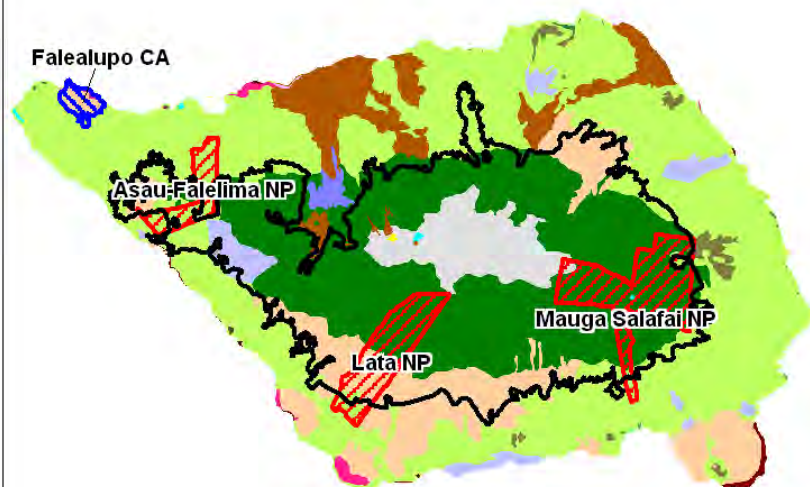
Current total terrestrial coverage of PAs = 20,000 ha = 7% Samoa's Land Area

With the planned extension of OLPP NP = 30,000 ha = 9.5% Land Area

Steps in a gap analysis



Samoa Terrestrial KBAs overlayed onto National Parks, Reserves, MPAs and Community Conservation Areas

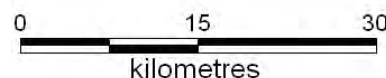
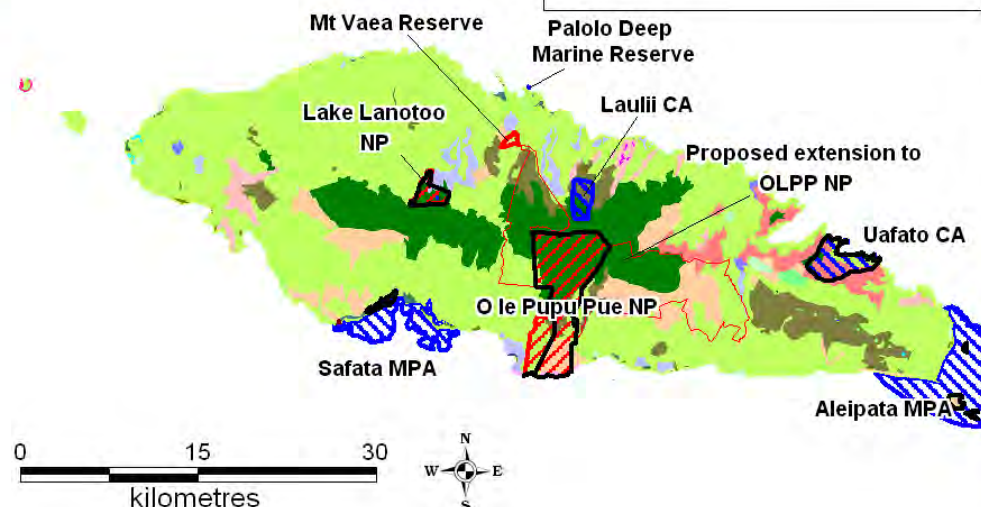


Ecosystem

(from Pearsall and Whistler 1991)

- Cloud forest
- Coastal forest
- Fernland
- Grassland
- Herbaceous Marsh
- Littoral forest
- Littoral scrub
- Lowland forest
- Mangrove forest
- Montane forest
- Ridge forest
- Swamp forest
- Secondary forest
- Volcanic succession
- Non-native forest
- Lake
- Disturbed coastal
- Disturbed herbaceous marsh
- Disturbed littoral forest
- Disturbed lowland forest
- Disturbed mangrove forest
- Disturbed Ridge forest
- Disturbed swamp forest
- Disturbed secondary forest

Effective conservation of all these terrestrial KBAs would result in an increase in PA coverage from 9 % to 27% of Samoa's Land Area



Preliminary Findings of the Gap Analysis



▪ Ecological Knowledge Gaps

- Freshwater Fauna
- Terrestrial invertebrates (eg Land Snails)
- Seabirds
- Flying foxes and the sheath tail bat
- Threatened plants



▪ Management Gaps of current PA coverage

- Completion of the legally required process for existing PAs is needed
- A strategy for the protected area system is needed
- Management plans of each protected area must be finalised
- Management plans must be resourced and implemented
- Cooperation amongst all stakeholders is required for effective implementation of conservation actions

▪ Ecosystem Gaps of current PA coverage

- Cloud forest
- Upland Swamp
- Coastal rainforest
- Fernland
- Littoral forest

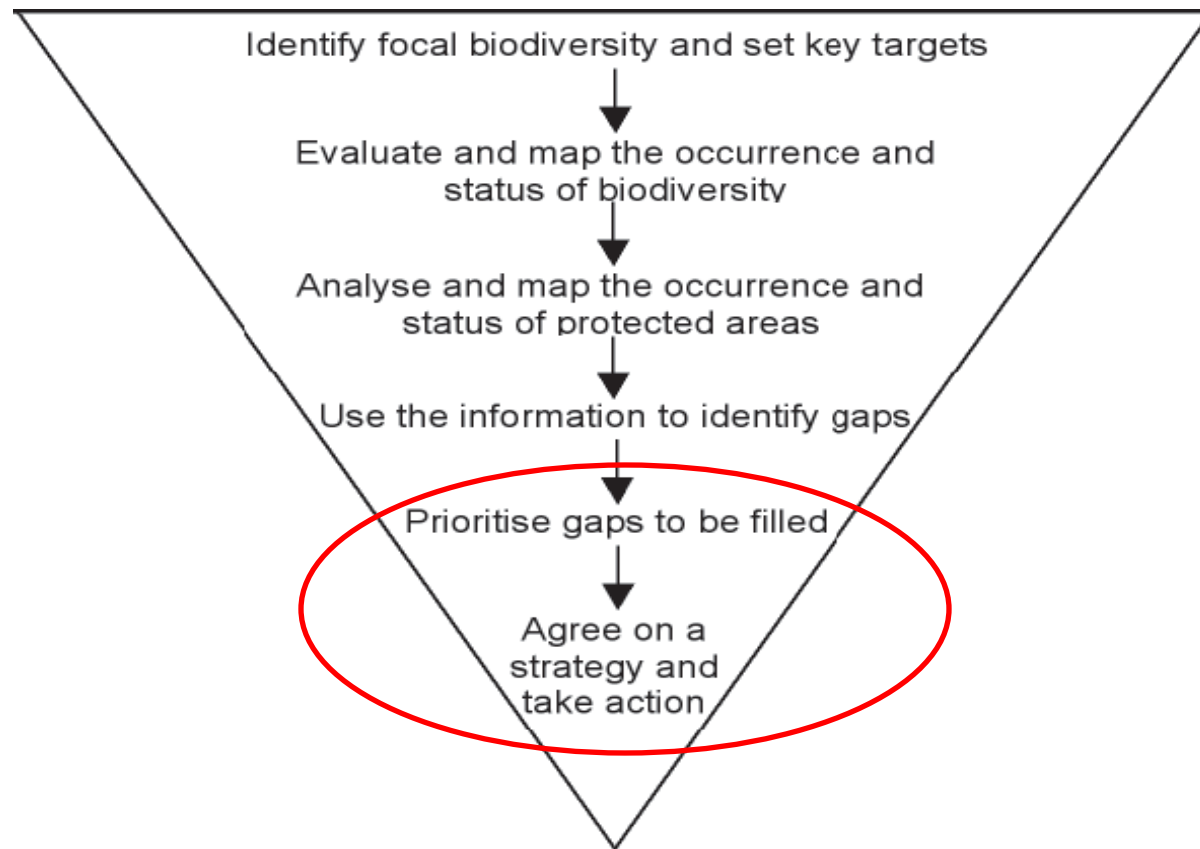
Areas of Terrestrial ecosystems covered by PAs and KBAs in Samoa

	Total Area of Ecosystem (Ha)	Area covered in PAs (Ha)	% Covered in PAs	Area covered in KBAs (Ha)	% Covered in KBAs	Proposed Target %
Cloud Forest	7781.44	128.99	1.66	7781.44	100.00	?
Coastal Rainforest	729.36	0	0	23.18	3.18	?
Fernland	36.73	0	0	0	0.00	?
Grass Land	37.00	0	0	37	100.00	?
Herbaceous Marsh	171.60	19.56	11.4	63.85	37.21	?
Lake	24.43	19.09	78.13	19.33	79.11	?
Littoral Forest	507.63	0	0	7.53	1.48	?
Littoral Scrub	212.52	109.03	51.3	104.39	49.12	?
Lowland Rainforest	29042.15	4540.42	15.63	11026.93	37.97	?
Mangrove	217.85	0	0	64.56	29.64	?
Montane Rainforest	64072.29	13951.07	21.77	47994.22	74.91	?
Ridge Rainforest	3615.35	110.84	3.07	627.96	17.37	?
Volcanic Scrub	9472.70	0	0	217.34	2.29	?
<i>Disturbed Coastal Forest</i>	45.20	0	0	11.7	25.88	?
<i>Disturbed Herbaceous Marsh</i>	177.62	0	0	0	0.00	?
<i>Disturbed littoral forest</i>	13.99	0	0	0	0.00	?
<i>Disturbed Lowland Forest</i>	8802.45	1431.81	16.27	304.8	3.46	?
<i>Disturbed Mangrove Forest</i>	281.52	0	0	5.61	1.99	?
<i>Disturbed Ridge Forest</i>	2147.67	0	0	0	0.00	?
<i>Disturbed Secondary Forest</i>	6320.26	112.45	1.78	1549.59	24.52	?
<i>Secondary Forest</i>	325.39	0	0	0	0.00	?
<i>Secondary Mesic Forest</i>	1078.26	0	0	0	0.00	?
<i>Disturbed Swamp Forest</i>	369.33	0	0	0	0.00	?
<i>Non-native ecosystem</i>	149609.39	6797.32	4.54	7832.02	5.23	?
Totals	285092.13	27220.58	9.55	77671.45	27.24	20.83

Next Steps...



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Target Setting Questions for Discussion



1. Our targets are
15% of total land area?
15% of the nearshore area?
2. What targets should be set for each ecosystem type?
(eg mangroves, swamp forest, cloud forest)
3. When should these targets be achieved by?
4. Should targets be set for the short term and long term?

Suggestions...



1. Short Term Targets = 10% of land by 2010 and nearshore by 2012? (CBD)
2. Medium Term Targets = 15% of land and nearshore by 2015? (NBSAP)
3. Long Term Targets = 30% of land and nearshore by 2025?
4. Targets should be set for every native ecosystem to ensure the long term viability of the ecosystem
5. Target percentages should be set according to the following criteria:
 - i. The ecological, social and economic value of each ecosystem
 - ii. The rarity of the ecosystem
 - iii. Threat to the ecosystem
 - iv. Achievability
 - v. Long term viability
6. Targets can be one of three values:
 - i. High = 100% (where 3 or more of the criteria come out high)
 - ii. Medium = 50% (where 1 or 2 of the criteria come out high)
 - iii. Low = 20% (where no criteria come out high)

Possible Targets for Each Ecosystem

	Value	Rarity	Threat	Achievability	Viability	% Covered in PAs	Proposed Target %
Cloud Forest	H	H	L	H	?	1.66	100
Coastal Rainforest	H	H	H	L	?	0	50 – 100
Fernland	L	H	M	M	?	0	50
Grass Land/Montane bog	L	H	M	H	?	0	100
Herbaceous Marsh	M	H	H	M	?	11.4	50
Lake	M	H	M	H	?	78.13	90 - 100
Littoral Forest	M	H	H	L	?	0	50 – 100
Littoral Scrub	M	H	H	M	?	51.3	50 – 100
Lowland Rainforest	H	M	M	M	?	15.63	50 – 100
Mangrove	H	M	H	M	?	0	50 – 100
Montane Rainforest	H	L	M	M	?	21.77	50 – 100
Ridge Rainforest	H	M	M	M	?	3.07	50 – 100
Volcanic Scrub	L	M	L	H	?	0	50 – 100
Disturbed Swamp Forest	H	VH	H	M	?	0	100
Disturbed Coastal Forest	L	L	H	M	?	0	?
Disturbed Herbaceous Marsh	L	L	H	M	?	0	?
Disturbed littoral forest	L	L	H	M	?	0	?
Disturbed Lowland Forest	L	L	H	M	?	1431.81	?
Disturbed Mangrove Forest	L	L	H	M	?	0	?
Disturbed Ridge Forest	L	L	H	M	?	0	?
Disturbed Secondary Forest	L	L	H	M	?	112.45	?
Secondary Forest	L	L	H	M	?	0	?
Secondary Mesic Forest	L	L	H	M	?	0	?
<i>Non-native ecosystem</i>	-	-	-	-	-	4.54	-
Totals					?	9.55	?