



MIST Patrol Monitoring and Countering Poaching of Russia's Amur Tigers



Objectives

Increase effectiveness of anti-poaching efforts to protect tigers in 4 protected areas in Primorski Krai



Increase tiger numbers both inside *and* outside these protected areas

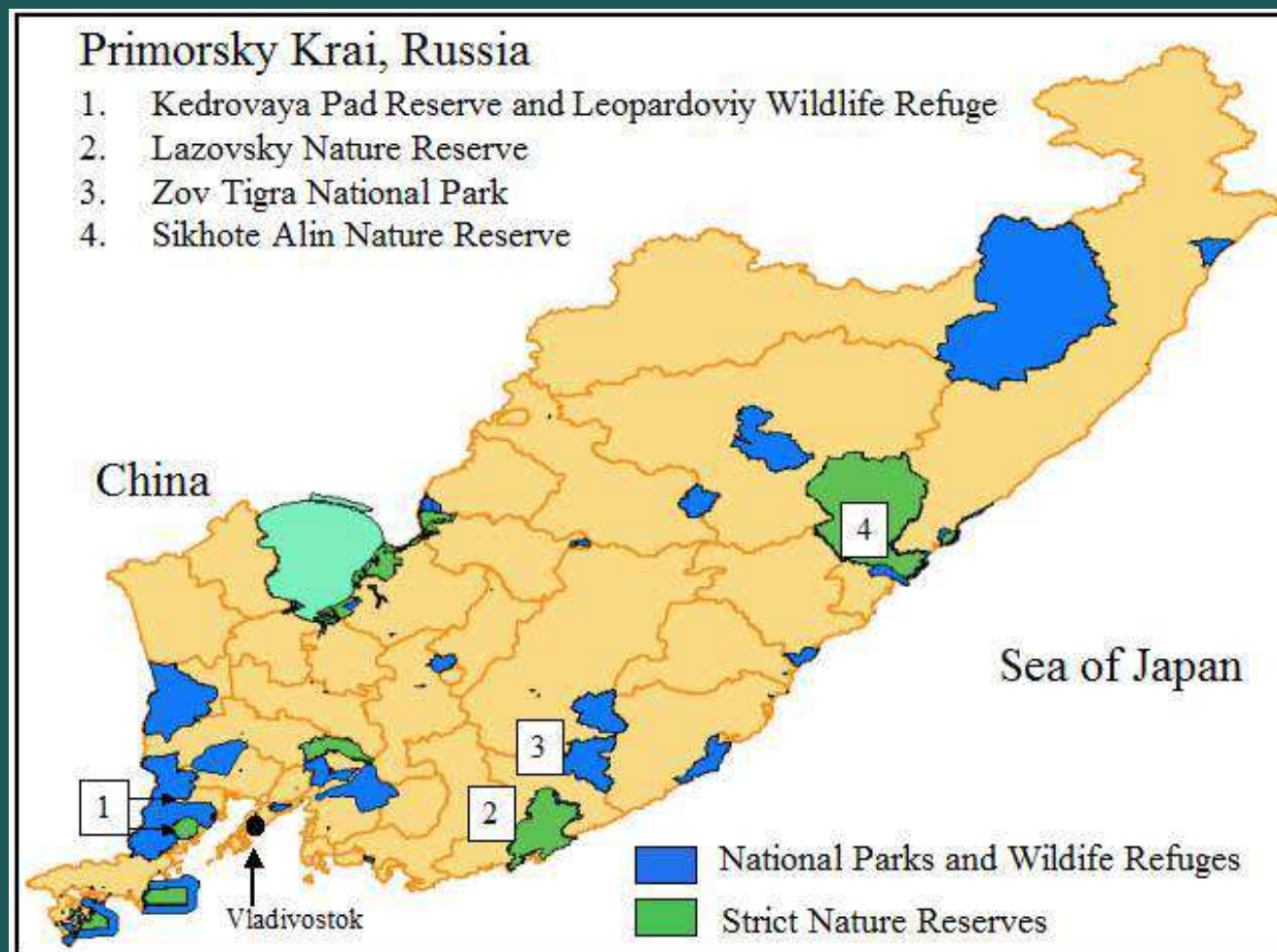


PROGRAM COMPONENTS

1. Improving Protection in 4 protected areas
2. Organise Tiger and Prey Population Monitoring at these 4 sites



Project Sites in Russia



- Sites 1 & 2 MIST Patrol Monitoring launched December 2010.
- Sites 3 & 4 MIST Patrol Monitoring launched August 2011.

Size of the sites, present and potential tiger populations

Site	area size (km2)	present tiger population	potential tiger population
Kedrovaya Pad - Leopardoviy	1805	7	27
Iazovsky Nature Reserve	1220	8	18
Zov Tigra National Park	831	4	8
Sikhote Alin Nature Reserve	4014	30	40
Total	7870	49	93

PROGRAM COMPONENTS

1. Improving Protection in 4 protected areas

- ✓ Introduction of the MIST patrol monitoring system
- ✓ Introduction of a system of “adaptive patrol management”.
- ✓ Introduction of a performance linked bonus scheme for inspectors based on quality of patrol work (\$1500 per month per PA)
- ✓ Provision of financial/operational support for the implementation of regular patrols (\$1050) and patrol data storage (\$150 per month).
- ✓ Provision of ongoing technical support (helpdesk patrol data entry, data analyses, producing patrol reports, training inspectors in data collection and patrol skills)



IMPROVING PROTECTION - STEPS

- ✓ Agreement with the 4 protected areas about the introduction of MIST patrol monitoring, inspector bonus system and patrol support.
- ✓ Design of MIST monitoring systems for each of the 4 protected areas.
- ✓ Training of inspectors in patrol data collection. Training of protected area staff in data storage.
- ✓ Provision of MIST equipment (GPS units, batteries, battery chargers, a laptop computer for each protected area for data storage).
- ✓ MIST monitoring test-period.
- ✓ Official launch of MIST (with bonus payments and patrol support).
- ✓ Start of adaptive patrol management aimed at continuously improving patrol quality (data analysis, feedback meetings, setting new patrol targets, etc).
- ✓ Monitoring changes in tiger and prey population size in the protected areas.



What is MIST patrol monitoring?

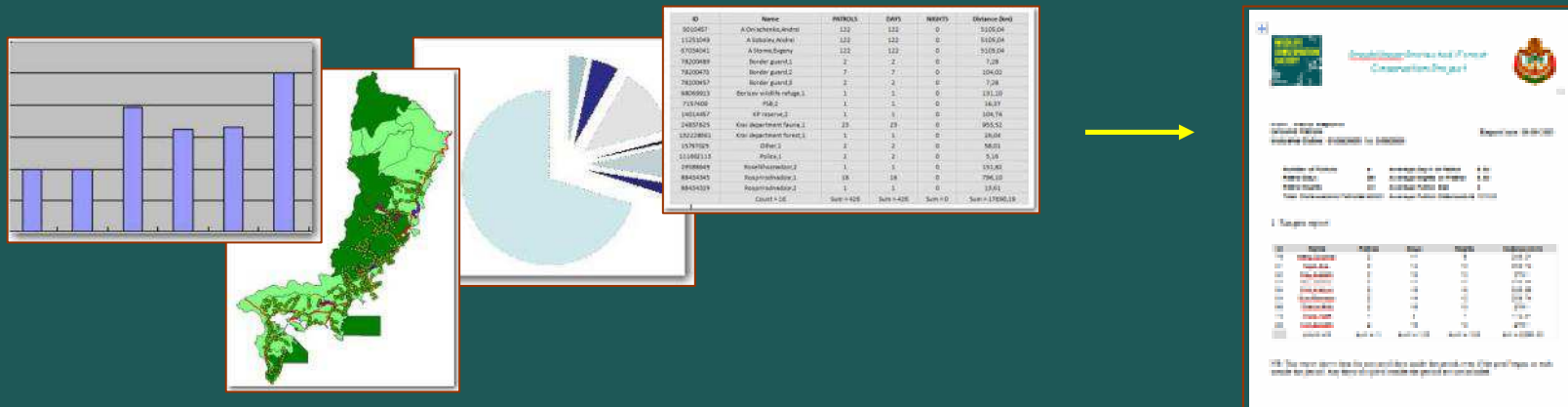
- A system for monitoring anti-poaching patrols developed in 1997 for protected areas in Uganda.
- Based on G.I.S. technology.
- Enables adaptive patrol management (patrol data collection - analysis - feedback - patrol planning).
- Today, MIST is used in many countries and conservation programs, but this is the first time it is used in Russia.
- MIST has been fully adapted by WCS and Phoenix for use in Russia.

MIST use in tiger sites in Asia



Advantages of MIST:

- User-friendly, no need for GIS expert.
- Easy to produce reports on anti-poaching efforts and results with highly visual graphs, tables and maps.

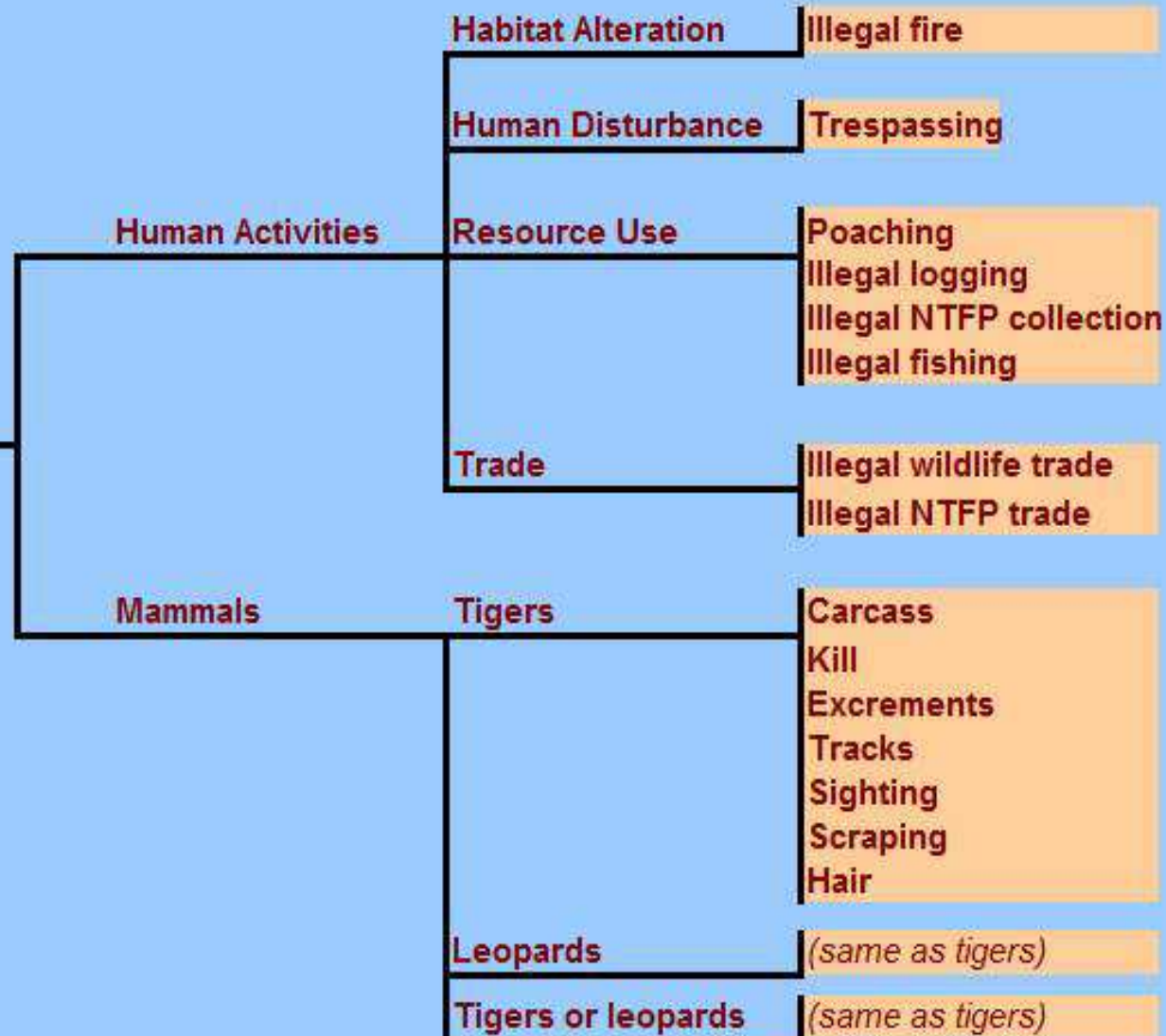


MIST data collection enables monitoring of:

- Habitat
- Wildlife
- Threats to wildlife and habitat
- Anti-poaching patrol activities
- Anti-poaching results



LEM observation categories in Russian PAs



PATROL DATA COLLECTION: MAIN FORM

Patrol Movement date **Team** **Patrol type** (normal, intelligence, road block, other)
Team leader **Responsible for GPS** № GPS
Team members 1)..... 2) 3) 4) 5) 6).....

Waypoints	Latitude	Longitude	Places	Transport	Time	Observation type	Remarks

Observation types

- I. Violations: 1. Poaching, 2. Fishing, 3. Logging, 4. Collection of NTFPs, 5. NTFP or wildlife trade, 6. Trespassing, 7. Illegal fire
- II. Tiger or leopard observations: 1. Dead tiger or leopard, 2. visual observation, 3. kill, 4. Hair, 5. Excrements, 6. Track, 7. Markings
- III. Positions: 1. start, 2. end, 3. position when patrolling (minimum every 30 minutes)

PATROL DATA COLLECTION: VIOLATION FORM

Violation.....

fill out for each violation	Illegal wildlife	seen	confiscated	People	apprehended	only tracks	Confiscated weapons	confiscated forever	Confiscated temporarily	Confiscated equipment	количество	Confiscated timber	trees	logs	M3
Date:	Alive			Violators			Rifle			cartridges shotg.		number			
Time:	Species.....						Shotguns				bullets				
Waypoint:	Dead (whole)						Pistol			small leghold trap		Confiscated NTFPs	gram	kg	
	Species.....			Citations					big leghold trap						
Sector:	Body parts			Administrative						snare					
	Species.....			No citation.....			Violation:.....			cage trap					
	Meat (kg)			Fine in Rbs.....			Compensation in Rbs.....			poison bottle		fern			
	Skin			Signed by organisation.....			Handed over to organisation:.....			empty pois. bottle		gins eng			
	Paws			Initiated criminal case						metal road daggers		other			
	Bones			No citation.....			Violation:.....			knife		Contribution of dog			
	Skull			Signed by organisation.....			Handed over to organisation:.....			axe		Suspect: tracked, guarded			
	Head									saw		Found: weapon / meat / animal			
	Lim b									chainsaw		Video and photo			
	Gall bladder									electr. Fish rod		video			
	Gall									fish net (meters)		photo			
	Other									small boat					
							Chase			large boat					
							Transport inspector			boat engine					
							Escaped (No)			diving suite					
							Apprehended (No)			mechanic spear					
										fishing spear					
										trailer					
										Other					
Additional remarks															

PATROL DATA COLLECTION: LEOPARD AND TIGER FORM

Species (1. tiger, 2. Leopard, 3. Tiger or leopard)

Date: _____ Time: _____ No Waypoint _____ Sector: _____	Observation type	Video and photo	Kills
	- Dead tiger or leopard - Visual observation - Kill - Hair - Excrements - Track	Photo Video	Both wild and livestock
			Species killed animal
			Freshness: (fresh / decomposing / old / skeleton)
		Condition before death: (good / normal / bad / unknown)	
		Bites: (neck and throat / limbs / body / head)	
		Scratches: (neck and throat / limbs / body / head)	
		% eaten	
		Parts eaten (hind / hind legs / front legs / body / head)	
		Visual observation: (animal seen / not seen)	
		Only for livestock	
		Kind of farm: (deer farm / other / not at a farm)	
		Husbandry: (enclosure / in building / free ranging)	
		Compensation agreed (yes / no)	
	Remarks:		

Leopard or tiger carcass			
Sex: (M / F / unknown)		Condition before death: (good / normal / bad / unknown)	
Min. age (months / unknown)	Cause of death: (shot / trap-snare / cage trap / poison / predator / disease / other / unknown)	
Whole animal: (fresh / decomposing / old / skeleton)			
Body parts: (head / front legs, hind legs, tail, other)		% eaten	%
		Parts eaten (hind / hind legs / front legs / body / head)	
(found by team / shown to team)			
Post mortem (yes / no)		Genetic analysis (yes / no)	

MIST Patrol Management Process



with GPS units and data forms

[illegible]

Data entry & processing

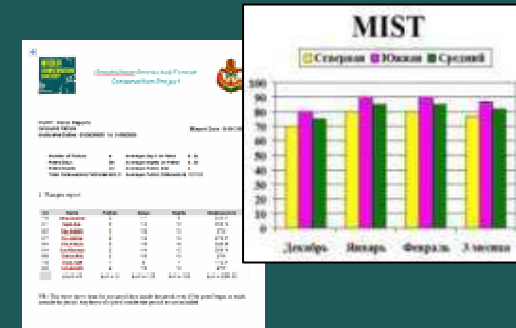


Field patrols & data collection

Adaptive Management



Feedback strategy meetings



Analysis & reporting

Management Review & Feedback Loop

- We process patrol data into 2-month patrol reports for each of the 4 protected areas.
- We organise feedback meetings with the management and inspectors of protected areas.
- The patrol efforts and results of each team are discussed at these meetings.
- New patrol targets are set at the meetings for each team in order to continuously improve patrol quality.



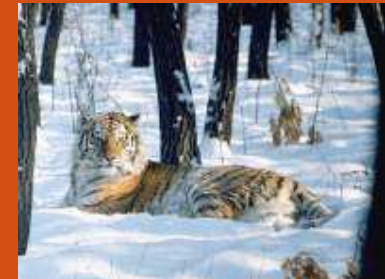


Inspector Incentive Scheme



(\$1500 per month per protected area)

- Provides financial incentive for inspectors to improve performance
- Tactical mechanism to direct patrol efforts
- Creates healthy competition between patrol teams (better performance)
- Improves team work, team spirit & morale
- May reduce staff turnover

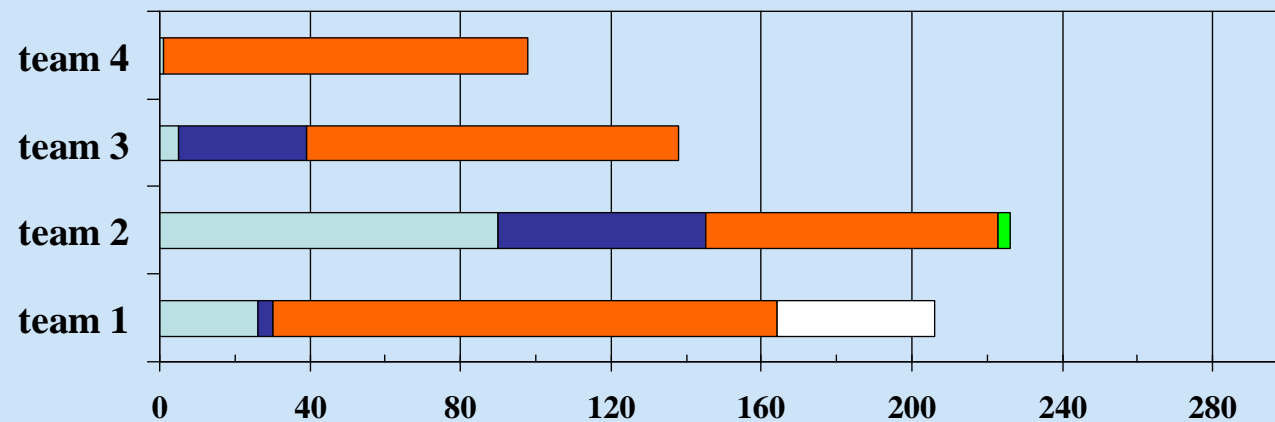
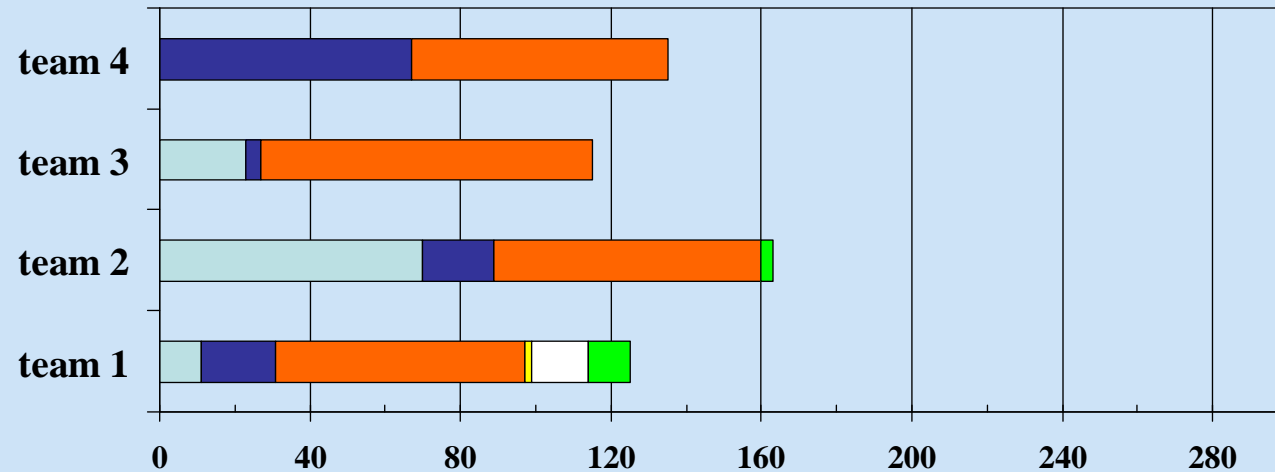


Patrol reports – example 1

Indicators for Incentive payments (weight of each criterion in brackets)				
	Teams			
	1	2	3	Total PA
I. Quality of LEM data collection				
1. Recording data on forms (1)				
2. Recording routes with GPS (1)				
<i>Subtotal score</i>				
II. Patrol efforts				
3. Patrol days (= 24-hour period with at least 1 patrol) (2)				
4. Distance foot patrols (2)				
5. Distance motorised patrols (2)				
6. Total time spent on patrols (2)				
7. Frequency of early morning and night patrols (2)				
8. Patrol coverage (2)				
<i>Subtotal score</i>				
III. Patrol results				
9. Confiscations (3)				
10. Uncovered violations / Citations / Initiated prosecution (3)				
11. Fines (3)				
12. Tiger and leopard related observations (1)				
<i>Subtotal score</i>				
IV. Other work				
13. Work not related to protection (3)				
<i>Subtotal score</i>				
Total score				

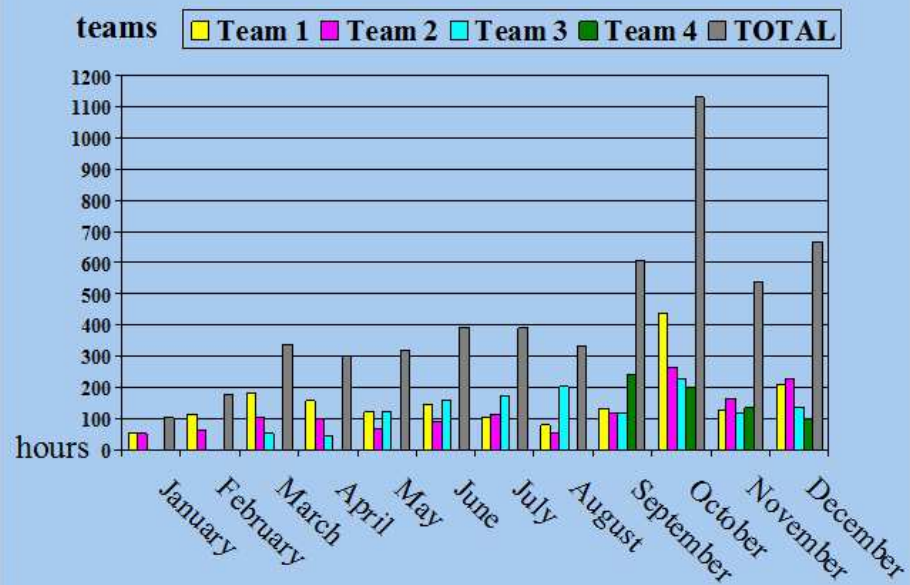
Patrol reports – example 2

Time spent on patrols (hours)

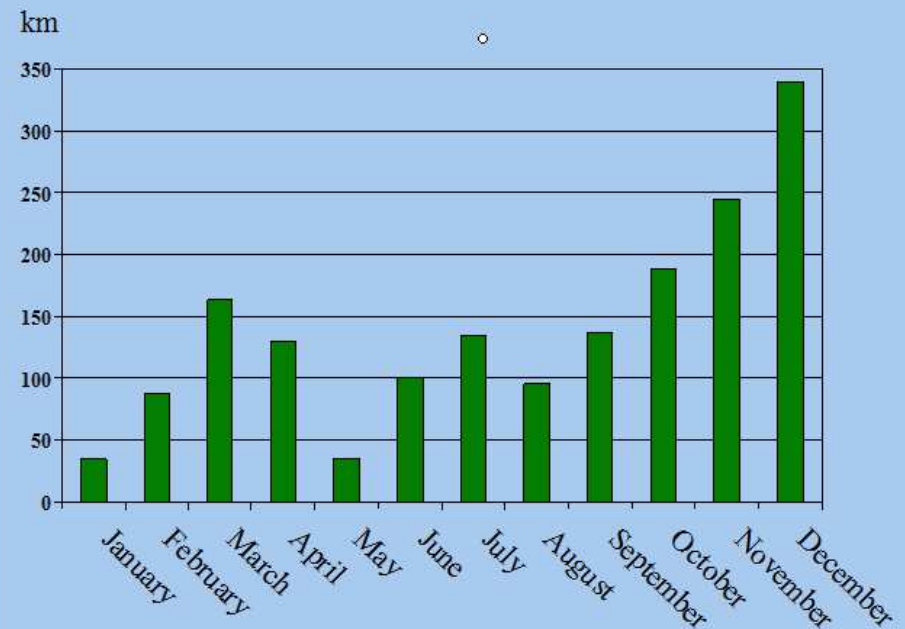


Patrol reports – example 3

Time spent on patrols, 2011



Foot patrol distances 2011



(Anti-)poaching indicators:-

Anti-poaching effort

- no. of patrols
- no. patrol days
- patrol distance
- patrol start times
- no. hours patrolled
- patrol coverage

Anti-poaching results

- uncovered violations
- arrests and citations
- fines and convictions
- confiscations
(weapons, snares, game)



Results per unit effort

- per patrol
- per km patrolled
- per hour patrolled
- per inspector or team
- per \$1 spent



PROGRAM COMPONENTS

2. Organise Tiger and Prey Population Monitoring at the 4 sites



- ✓ Assess monitoring protocols at the 4 protected areas
- ✓ Design and introduce modern techniques for estimating tiger and prey abundance
- ✓ Conduct annual winter surveys



Thank you!