

Ecotourism linking communities & nature

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Outline

Framework

Communities

Conservation outcomes

Case studies

Critical components

Obstacles to success

Framework

Ecotourism as a social machine

5P's of sustainability in tourism

Ecotourism works best in conservation

Ecotourism is big enough to count

Links between tourism and nature

Health, culture important, unstudied

Why does it matter?

“How can we harness human desires, and create **social machines** and political institutions, **to protect planetary ecosystems?**”

Buckley et al., *Science* **356**, 590-592 (2017).

Can tourism be one of those social machines?
Answer: usually no, but sometimes, **YES**.

Sustainable tourism research & reality, review

5P's of sustainability: Population, Peace,
Prosperity, Pollution, Protection: i.e.,
role of ecotourism in parks, conservation
role of communities in conservation tourism

Buckley, *Ann Tour Res* 39, 528-546 (2012).

Ecotourism & conservation

best chance for sustainable tourism
if +ve effects can outweigh –ve impacts
tourism creates impacts inside reserves
but also funds new & existing reserves
thereby protecting threatened species
public, communal, private reserves

Ecotourism is big enough to count

trillion-dollar (US) global outdoor tourism

\$600 billion tourism value of parks alone

≤80% of national parks agency budgets

≤80% of threatened species habitat range

≤66% of threatened species populations

Links

& areas of study

parks, nature,
biodiversity
conservation

visitors,
outdoor
recreation,
tourism

ecology, impacts
economics, money
management, law
behaviour, psych
health, medicine
community, culture

Nature & mental health: *shinrin-yoku, jing hua xin ling.*

Frontiers in Ecology & Evolution (2017)

doi: 10.3389/fevo.2017.00016

Frontiers in Public Health (2016)

doi: 10.3389/fpubh.2016.00257

Frontiers in Public Health (2017)

doi: 10.3389/fpubh.2017.00220

Communities

Communities & conservation

Local place attachment

Conservation tourism model

Roles of NGOs

Communities & conservation

Mechanisms depend on land tenure type

Public, private: prevent incursions, poaching

Communal: change land use to conservation

Community= resident & livelihood from site

Change own lifestyle, or take political action

Eg to oppose mining, logging, large resorts

Only works if locals get ecotourism income

Local Place Attachment

Tribal or traditional, Indigenous

Parents, past generations, eg farms

Time and investment in land

Tacit expert knowledge, eg hunters

Emotional attachment, eg recreation

Conservation tourism

many different models worldwide

most involve local communities in some way

“care of land, care of wildlife, care of people”

many also involve NGO's, trusts, donors

change land use, production to conservation

Conservation Tourism, CABI, 2010

NGO community conservation

trigger: threat (strong) or opportunity (weak)

who initiates, what role for NGO, community

10 NGO roles: lobbyist, landowner,
networker, champion, tour operator, tour
founder, certifier, advisor, broker, consultant

Romero-Brito *et al.*, *PLoS ONE* 11: e0166919 (2016).

Conservation outcomes

How to measure outcomes?

Proportions of parks agency budgets

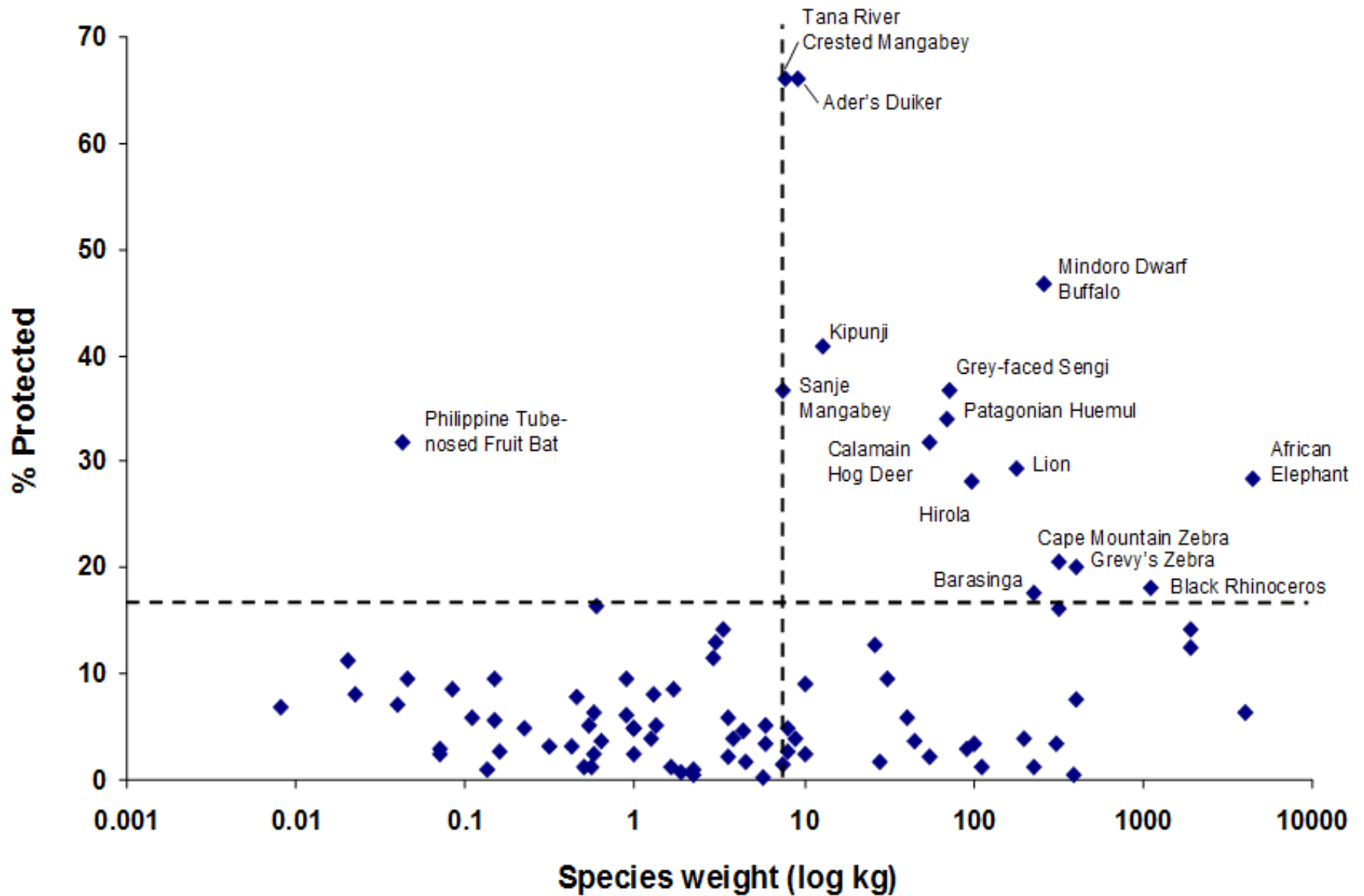
Population accounting, Red List spp

Population viability models

Tourism and threatened species: population accounting approach

use distribution maps and park budget info
% global population relying on tourism \$
IUCN RedListed mammals, birds, frogs
for a few species, tourism \$ critical
Includes well-known tourism species

Buckley et al., *PLoS ONE*, 2012-2013, 3 articles



Tourism and threatened species: population viability models

ecological models, individual populations

needs lots of basic biological information

includes both +ve & -ve tourism effects

convert to population parameters

eg more habitat, less poaching etc

Species: cheetah, wild dog, orang-utan etc

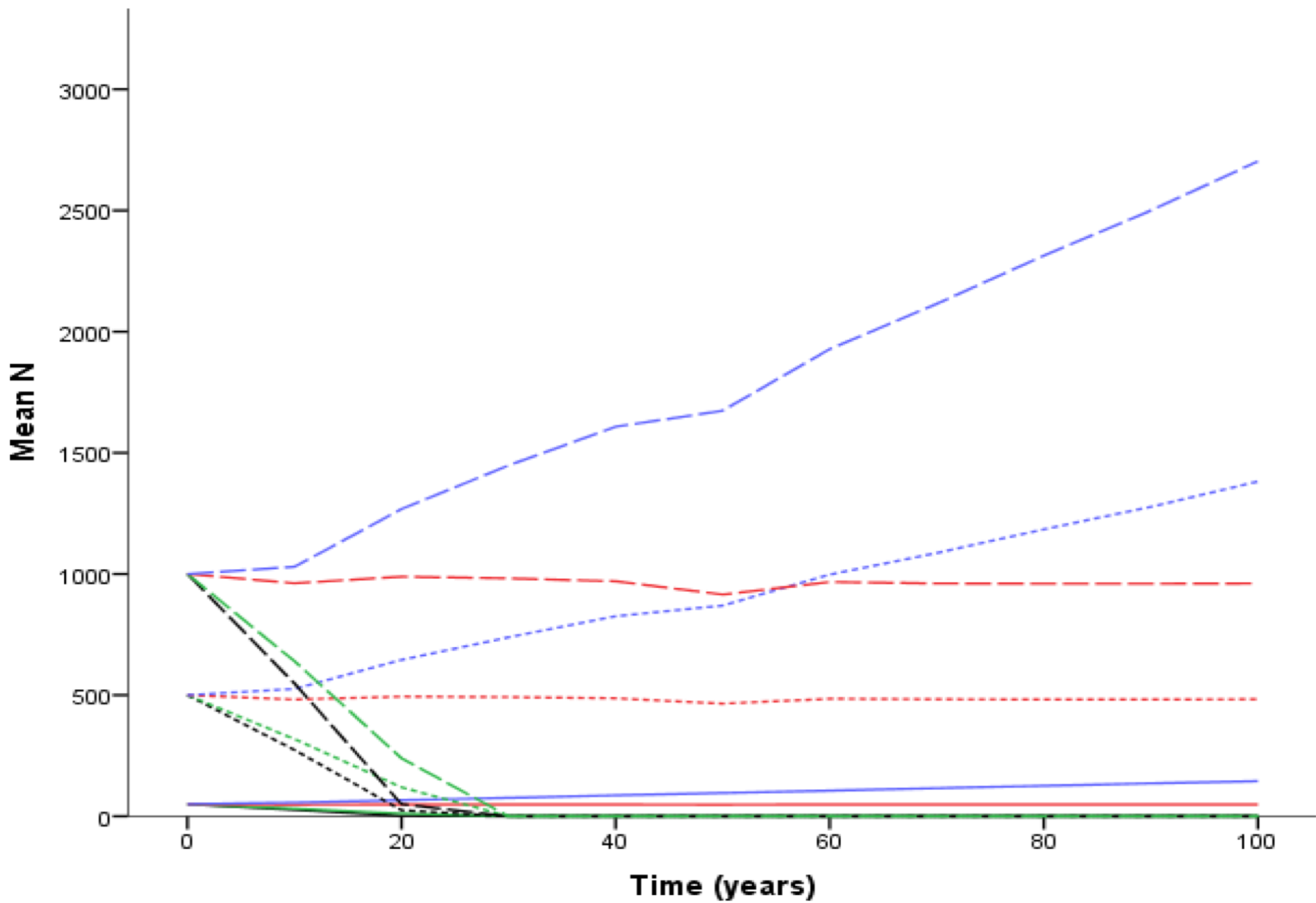
PLoS ONE 11(2), e0147988 (2016)





Tourism and threatened species, case study: orang-utan, Sumatra

3 existing orang-utan populations studied
all threatened by logging, local poaching
will be extinct in 20 years, loss of habitat
large-scale tourism can displace logging
orang-utan can then survive and prosper
[but tourism effects differ for each species
eg NZ sealions, tourism effects negative]



Orangutans, subject to logging, ecotourism shifts from extinction to growth

Case Studies

[a small selection]

Ecotourism, community, & conservation: case studies 1

Polar bear, Hudsons Bay, Canada

Gorilla, Mgahinga, Uganda

Rhino, Lewa Downs, Kenya

Big cats, Phinda, South Africa

Snow leopard, Himalayas

Puma, Torres del Paine, Chile

Ecotourism, community, & conservation: case studies 2

Nepal, community reserves of national parks

Mnemba Island, Tanzania, marine

Tiger, Madhya Pradesh, India

Bird, lemur species, Madagascar, local guards

Grand Canyon, USA, Navajo Nation

Great Barrier Reef, Australia, dive industry







Threatened species, Africa

Private reserves funded by ecotourism

Economic gains for locals > livestock

Significant % of global population, some spp

Buckley, *Nature*, 467, 1047 (2010)

The Conservation Lab, Stellenbosch (2016)



Tiger, Madhya Pradesh, India

Sparsely inhabited forest converted to park

Locals still live and keep cattle in forest

Compensation schemes inadequately funded

Government budgets politically delayed

Tiger tourism provides immediate local funds

Locals determine if poachers find tigers

Buckley & Pabla, *Nature* **489**, 33 (2012)

Buckley, *New Scientist* **2886**, 28-29 (2012)



Polar bear, Canada

Polar bear gather to get onto new winter ice

They are very hungry until they can eat seals

They invade town garbage dump for food

Historically, locals shot bears found in town

Now polar bears support ecotourism industry

Bears trapped, “bear gaol” aversion treatment

But some locals run bear feeding scams



Birds & lemurs, Madagascar

Many threatened species, small ranges

Habitat threatened by charcoal burning

Hubberts Sportive, central sapphire mines

Vangas, couas, pittas, etc, southwest forests

For some species, also poaching, eg aye-aye

Protected by locals, paid as tour guides

Coup = no tours = no \$\$ = no conservation



Migratory cranes, China

Zhalong wetland, Heilongjiang

Migratory route for threatened crane species

Under threat by farming, draining, spas

Large-scale crane birdwatching tourism

Mostly domestic tourists, Chinese design

Combination of captive, semi-captive, wild

Maintains marsh habitat for crane breeding



Mountain forests, Ecuador

Villages with bird ecotourism keep forest

Lodges, tours, hummingbirds, manakin etc

Intact forest provides water for crops

Villages without tours clear forest for farms

But without forest, fields are dry, crops fail

Some critical components

Compensation schemes

Rights and equity

Links to adventure tourism

Community cultural pride

Wildlife and crop loss compensation schemes

Responsibility for proactive protection

Accurate local valuation of losses

Partial payments for poor protection

Prompt compensation payments

Adequate funding to meet liabilities

Transparency, equity etc

Rights and equity aspects

Who has what rights to what?

Land: rights to access, harvest, on-sell

Wildlife: rights to kill, sell, etc

Livestock: rights if they enter reserves

Eco & adventure tour links

Maldives: dive helps sharks, boats also surf

Indonesia: surf tours reduce reef dynamiting

Africa: race events help fund private reserves

China: raft keeps wilderness for snow leopards



Ecotourism & cultural pride

Botswana: Kalahari San desert survival tours

Canada: Inuit snowmobile hunting

Australia: Aboriginal bush tucker tours

East Africa: Maasai Olympics save lions



Obstacles to success

Conflicts with hunting

Abuse of ecotourism aims

Displacement of local communities

Override of successful projects

Conflicts with hunting

Hunting tourism cf game-viewing tourism:

Cecil the Lion, Zimbabwe

Northern Tanzania WMA's, eg Kleins

Commercial hunting disguised as tradition:

Kalahari hunting and poaching

Narwhal, Baffin Island, Canada

Ecotourism can be abused

Use ecotourism to get political power:

land rights, sell for mining

park access, build resort

land control, log forests

Use ecotourism to earn money, then buy:

cattle, chainsaws, boats, fuel, rifles

Communities can be displaced

Wars, invasions, terrorism

Migrants: economic, amenity

Land grabs, purchases, tenure changes

Industrial invasions: mining, logging,
livestock, fisheries, tourism

Loss of local livelihoods

Ecotourism can be overrun

Iran, Dasht-e-Lut: villages of big developers

China, Sanjiangyuan: wilderness of roads

Large-scale logging, eg in: Congo, PNG,
Solomons, Madagascar, Australia, USA

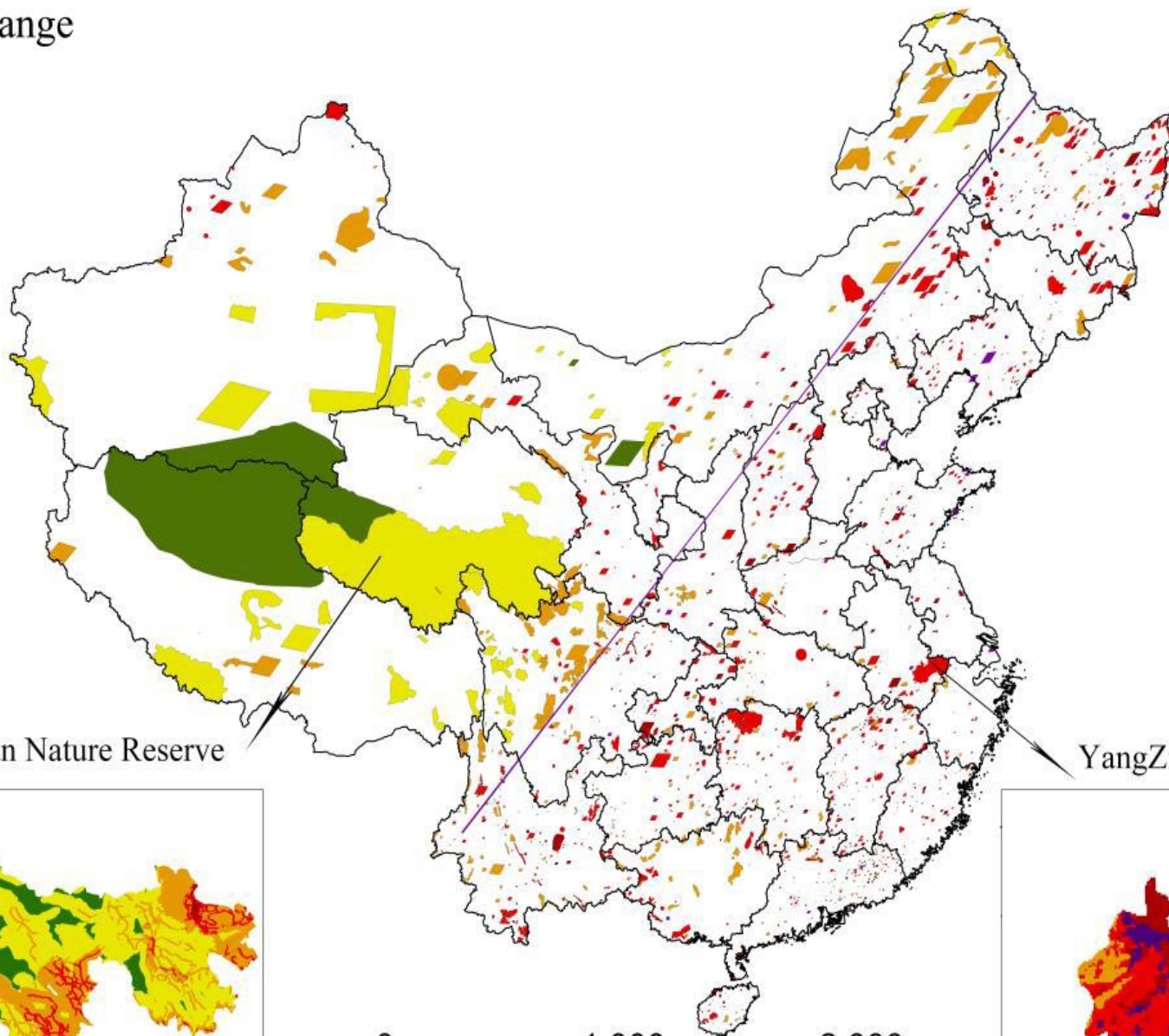
Mexico: drug running, illegal fisheries

Dasht-e-Lut, Iran

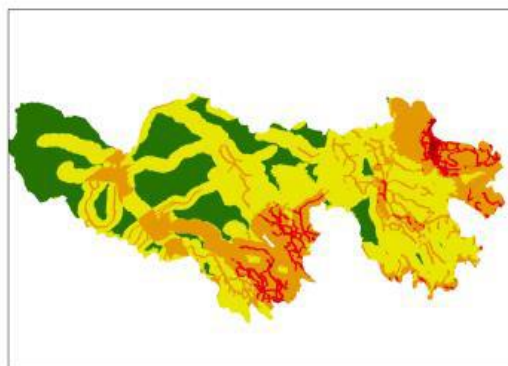


PAMHFI range

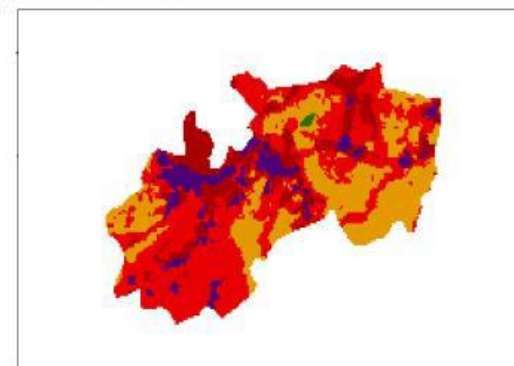
- 0-5
- 5-16
- 16-28
- 28-40
- 40-57
- 57-87
- Hu's line



SanJiangYuan Nature Reserve



YangZi-E Nature Reserve







Conclusions

nature does not negotiate.

but we **can** change human societies.

ecotourism **can** be a social lever

catalyse communities to change land use

&/or to protect individual species

health & culture are key aspects