

**ICRAN MAR Sustainable Marine Recreation workshop in Placencia, Belize
Threats and Solutions for Sustainable Business Practices**

Exercise #1 – Brainstorming group views on threats to reefs in Roatan

- Anchor damage
- Boat traffic (carrying capacity)
- Pollution (Oils/fuels; suntan lotion; bottom paint; servicing of vessels)
- Inexperienced snorkelers and divers
- Inexperienced and unprofessional tour guides and captains
- Harvesting of key species (i.g. grazers)
- Unregulated tours (tours without tour guides)
- Runoff (agriculture and aquaculture)
- Reef groundings
- Shrimp trawlers
- Lack of pump-out stations (sewage disposal)
- Overweight/buoyancy check of divers
- Illegal fishing
- Coastal development
- Natural disasters

Exercise #2 – Break out groups ranking marine recreation threats to reefs in southern Belize (based on area, intensity and urgency of threat)

Overall scores from all participants

- | | | |
|--|---|-----------|
| 1. Anchor damage | = | 43 points |
| 2. Pollution | = | 42 points |
| 3. Inexperienced snorkelers/divers | = | 40 points |
| 4. Inexperienced/unprofessional guides | = | 28 points |
| 5. Boat traffic/carrying capacity | = | 27 points |

Group #1

- | | | |
|--|---|-----------|
| 1. Anchor damage | = | 12 points |
| 2. Pollution | = | 12 points |
| 3. Inexperienced snorkelers/divers | = | 10 points |
| 4. Boat traffic/carrying capacity | = | 8 points |
| 5. Inexperienced/unprofessional guides | = | 3 points |

Group #2

- | | | |
|--|---|-----------|
| 1. Inexperienced snorkelers/divers | = | 14 points |
| 2. Inexperienced/unprofessional guides | = | 9 points |
| 3. Anchor damage | = | 8 points |
| 4. Pollution | = | 8 points |
| 5. Boat traffic/carrying capacity | = | 6 points |

Group #3

- | | | |
|------------------|---|-----------|
| 1. Anchor damage | = | 12 points |
| 2. Pollution | = | 11 points |

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- | | | |
|--|---|----------|
| 3. Inexperienced/unprofessional guides | = | 9 points |
| 4. Boat traffic/carrying capacity | = | 7 points |
| 5. Inexperienced snorkelers/divers | = | 6 points |

Group #4

- | | | |
|--|---|-----------|
| 1. Anchor damage | = | 11 points |
| 2. Inexperienced snorkelers/divers | = | 11 points |
| 3. Pollution | = | 10 points |
| 4. Inexperienced/unprofessional guides | = | 7 points |
| 5. Boat traffic/carrying capacity | = | 6 points |

Exercise #3 – Threats reduction: examining root causes for top three threats; informing potential solutions for sustainable business practices

ANCHOR DAMAGE

- Lack of mooring buoys
- Poor site selection (lack of knowledge)
- Lack of care and/or education
- Inadequate gear/equipment
- Use of “secretive” dive sites
- Anchoring versus drift diving
- Lack of official procedures
- Lack of regulation

POLLUTION

- Improper garbage/waste disposal
- Poor boat maintenance
- Overcrowding of sites (pollution from excess use)
- Using two-stroke versus four-stroke engines
- Disregard for regulations
- Sewage discharge
- Lack of pumping stations/proper infrastructure
- Lack of dry dock facilities
- Invasive (non-native) species
- Lack of knowledge
- Lack of care

INEXPERIENCED SNORKELERS/DIVERS

- Poor training
- Poor management
- Inexperienced guides
- Lack of briefings
- Lack of in-water supervision
- Lack of interest by the tour guide
- Bad equipment
- Poor site selection

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- Lack of use of snorkel vests
- Lack of enforcement

Exercise # 4 – Developing solutions for sustainable marine recreation

ANCHOR DAMAGE

1. What is the activity/solution?

- National mooring program
- Training/standards and procedures
- Community involvement
- Site selection
- Monitoring and retinance

2. Who will be involved?

- Tour guide association
- Bare boat charter companies
- Fisheries department
- Environmental groups

3. Resources Needed

- Planning committee (survey)
- Purchasing the proper equipment
- Training on proper technique
- Funding and management

4. Next Step

- Publicity (create the need)
- Keep it real! Keep it simple!
- Set a date to create
- Community involvement
- Steering committee

POLLUTION

1. What is the activity/solution?

Education (Signs, brochures, school projects, gov't lobbying)

- Tour operators
- Tour participants
- Everyone

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Threats and Solutions for Sustainable Business Practices

Infrastructure

- Trash containers (maintained!)
- Pumping stations
- Recycling program

Regulation (Enforced)

- Required record-keeping

Education

- Signage
- Brochures / flyers
- School projects (Beachcombers Society)

Government Lobbying

- Regulations
- Recycling program
- Enforcement

2. Who will be involved and what role will they play?

Education

- Schools – organize kids & programs
- FON / Rangers – enforcement / active education
- Tour Operators / Guides / Resorts - educate tourists, distribute materials
- Tourist – help clean up

Government

- Fisheries
- Forestry
- BAHA - all informed of existing regulations

3. Resources needed

- Money
- Brochures
- Dedicated people
- Beach combers
- Trash containers
- Pick up processing
- Pumping stations

4. Next Steps

- Need dedicated people
- Develop signs / brochures
- Action plan

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- Litter
- Boat pollution
- Get Maritime involved 'govt.'

INEXPERIENCED SNORKELERS / DIVERS

1. What is the activity/solution?

- Briefing
- Training
- Bouyancy check / clinic
- Guide training
- Regualtions

2. Who will be involved and what role will they play?

- Guides – steward
- Trainers – educate
- Committee to develop curriculum – curriculum development
- Park Rangers – enforcement
- Bareboat charters – briefings

3. Resources Needed

- Curriculum
- Trainers
- Venue
- Educational materials
- Marketing
- Finance
- Gear
- Commitment

4. Next Step

- Money
- Support of community organizations
- Sell the idea
- Choose committee
- Develop action plan
- Recruitment