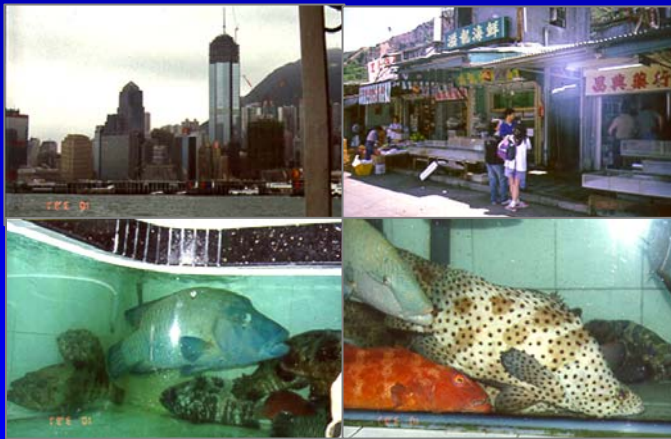




U.S. CORAL REEF TASK FORCE MEETING  
Ngarachamayong Cultural Center, Republic of Palau  
Saturday, November 5, 2005

# The Live Reef Fish Trades in the Pacific: Impacts, Issues & Needs



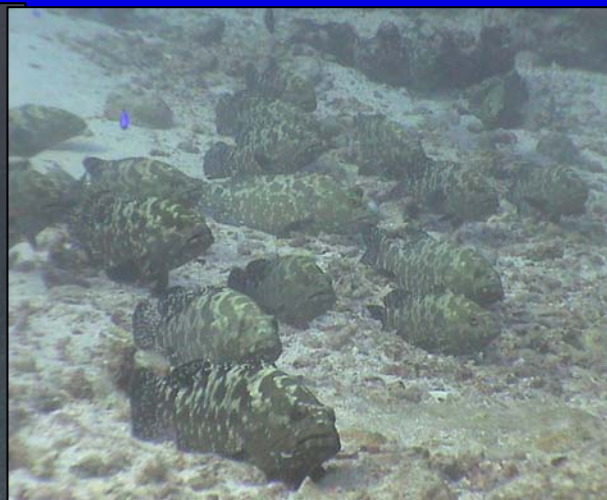
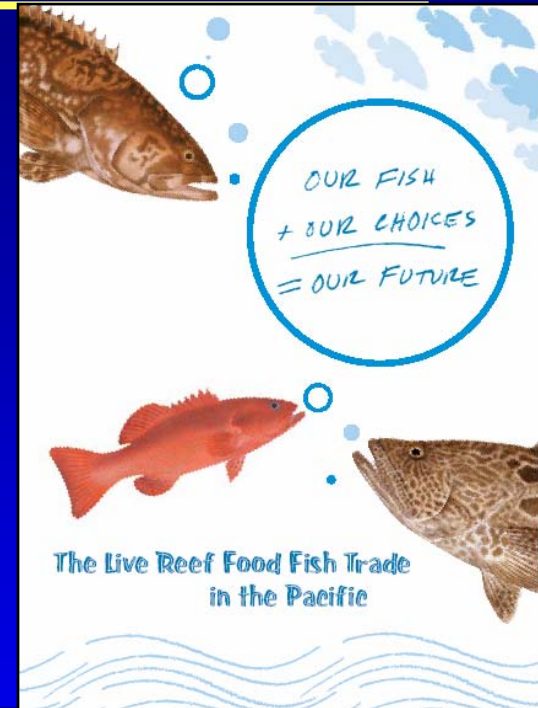
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# Presentation Overview

- History & status
- Current efforts & support
- Issues & challenges
- Needs:
  - Understanding the resources
  - Awareness of the LRF trades
  - Effective management & building capacity



# History & Status: Live Reef Food Fish Trade

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## What:

- Luxury trade in live fish for food
- Markets in HK, Southern China, and in the USA

## Species:

- 2 main fish families, few species
- Serranids (mostly):
  - *Plectropomus* species
  - *Cromileptes altivelis*,
  - bigger *Epinephelus* species
- Labridae:
  - *Cheilinus undulatus*

## Why:

- High demand
- High prices = attractive income opportunity for fishers

## Volume, Value & Trends:

- Global: 100,000 mt = US\$830 (1998 peak)
- Pacific: only 10% of global
- Still high demand
- Lower prices
- Cultured *Cromileptis* and *Epinephelus* success

# History & Status: Aquarium Fish Trade

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## What:

- Luxury trade in colourful tropical marine fish, invertebrates, live coral & live rock for hobbyists or decoration (homes & offices)

## Species:

- Globally: 50+ family 1000+ species
- Pacific-150 fish species, 50+ coral species
  - Fish: Pomacanthids, Labrids  
Pomacentrids, Chaetodonts  
Blennidae and Gobidae and more...
  - Corals: Pocilloporids, Fungiids & Acroporas...

## Why:

- High Demand = High Prices
- Income opportunity for locals
- Use of non-food resource (value added)

## Volume, Value & Trends:

- Global: 15-36 million of pieces of fish = US\$250m
- Pacific (2003 est.): US\$25m
  - Fish: 400,000 pieces = US\$2m
  - Live Coral: 200,000 pieces = US\$5m
  - Live Rock: 700 mt = US\$18m
- Increasing demand
- Shift from fish to live rock



### Aquarium (Start & Status)

- 1970's Fiji & Kiribati (on-going)
- Mid 1970's Solomon Is. (on-going)
- Early 1980's American Samoa (on-going)
- Late 1980's, Palau (on-going)
- 1988 Cook Is. (on-going)
- 1989 Tonga (on-going)
- Early 1990's RMI & Vanuatu (on-going)
- Early 1980's Samoa (on hold)
- Early 1990's FSM (banned),

### LRFFT (Start & Status)

- 1991 PNG (on-going),
- 1998 Fiji (on-going)
- 1984 Palau (2004/5 stopped)
- 1991 FSM (Yap now negotiating)
- 1994 RMI (on hold)
- 1996 Kiribati (on hold)
- 2001 Vanuatu (ban)

★ Aquarium Fish

★ Food Fish

# Recent & Current Efforts & Support (1)

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## SPC (LRFFT & Aquarium):

- Co-ordinate LRFT regional efforts (partnerships)
- LRFT awareness
- LRFT resource assessment
- Building local capacity in field methods, & in data analysis and interpretation
- Assistance in development of management plans and monitoring programs
- Assistance in implementation of management plans and monitoring programs

## TNC (LRFFT):

- Partnership development & capacity building (regional, national & local)
- LRFFT awareness
- LRFFT management advice & support at regional, national & local levels
- Spawning aggregation science, monitoring, management & protection
- MPAs for spawning aggregation protection

# Recent & Current Efforts & Support (2)

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## MAC (Aquarium trade):

- Certification of collectors and companies
- Aquarium fish standards & certification
- LRFFT standards

## Other partners:

- ACIAR - economics of LRFFT, economic model for fishers
- IMA (resource assessments & awareness)

## Donor support to SPC & TNC:

- USAID & EAPEI
- Packard Foundation
- ADB
- Oak Foundation
- MacArthur Foundation

Future & on-going support needed as currently no funds to continue key activities

# Issues & Challenges: Understanding the Resources

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## LRFFT:

- Multiple species fishery
- A resource, but vulnerable to over-exploitation
- Unknowns on fish life histories, demographics, connectivity (both adults & larvae)
- Assessments, monitoring and status needs
- Spawning aggregations critical & vulnerable phenomena

## Aquarium Trade:

- Multiple species (fish & invertebrates)
- Unknowns on fish life histories, demographics, vulnerability to over-exploitation and harvesting impacts (live rocks)
- Need to establish baseline status and measure variability over time and space (monitoring costs)
- Need to set up sustainable harvest limits (often required by most fisheries managers)



# Issues & Challenges: Social Issues

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## LRFFT:

- User conflicts - tenure, subsistence/artisanal/commercial, diving
- Conflicts of interest - politics, corruption
- Conflicts over payments / royalties
- Unrealistic / unrealized expectations

## Aquarium Trade:

- Allocation of collecting areas - user conflict with tourist operators
- Conflicts over payments/royalties/user fees
- Dive safety/insurance for collectors
- Pricing conflicts among operators

# Issues & Challenges: Economic Implications

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## LRFFT:

- Potential value added (to existing fisheries)
- Potential fishery for remote communities (where no ice or freezers)
- Opportunity costs
- Costs of management exceed value of resource

## Aquarium Trade:

- Understanding of the chain of custody and economics = (supply and demand)
  - Realistic value/return for resource
  - Minimum price setting?
- Management costs (User-pays - how much?)

# Issues & Challenges: Management & Capacity

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## LRFFT:

- LRFFT establishes, operates and moves faster than government agencies can respond
- Regional, national & local management frameworks needed - precautionary principle; ecosystem-based management
- Limited legislation, regulations and enforcement in place
- Limited capacity to manage and monitor - nationally and locally

## Aquarium Trade:

- Need of effective management framework - legislation, regulations which includes industry & stakeholders -
- Limited resources and capacity to support management and monitoring nationally and locally
- Lack of good monitoring data at collecting, and at exporting (poor unreliable harvest information)

# Priority Needs

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Better understanding of the resources to ensure effective management

## LRFFT:

- Species demographics / life histories
  - Regional monitoring efforts
  - Targeted research for management
- Spawning aggregation dynamics
  - Site monitoring
  - Site characterization
- Connectivity - adult migration and larval dispersal to / from aggregations

## Aquarium Trade:

- Establishing baselines of stocks
- Setting up in-country monitoring programs
  - Fisheries dependent
  - Fisheries in-dependent
- Species demographics/ life histories, impact studies
  - Collection of biological data through operators
  - Targeted research

# Priority Needs

Better awareness & understanding of the LRF trades

## LRFFT:

- National and local awareness
- Review of awareness materials effectiveness
- Regional interactive database to support management agencies
- Monitoring of the trade
- Acquisition and dissemination of trade data

## Aquarium Trade:

- Development and dissemination of awareness materials
- Study of aquarium trade economics
- Awareness describing the dynamics of the trade
- Develop regional interactive database to improve information accessibility and support monitoring efforts of management agencies.



# Priority Needs

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## Development & application of *effective management & local capacity*

### LRFFT:

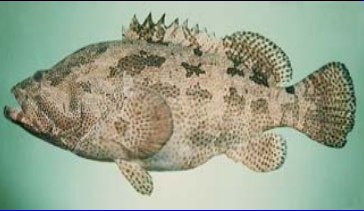
- Support national, state, and local levels - apply the precautionary principle; encourage ecosystem-based fisheries management
- In-country assistance in management process (consultation workshops)
- Assistance for legislation drafting
- Assistance for implementation, monitoring and enforcement (especially for 1st year for each country)

### Aquarium Trade:

- Support national, state, and local levels - apply the precautionary principle; encourage ecosystem-based fisheries management
- In-country assistance in management process (consultation workshops)
- Drawing up legislation to support management plans
- Support and assistance in the implementation of the management plans (in country for 1st year)

# Conclusions

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- LRF trades are here & need to be addressed
- For sustainable fisheries - need to apply precautionary principle and ecosystem-based fisheries management
- Priority Needs:
  - Understanding of the resources
  - Raising the awareness & understanding of the issues & challenges of the LRF trades
  - Application of effective management & building capacity
  - New &/or on-going donor support for regional, national and local level action