Marketing, Permitting and Shipping for Marine Ornamental Invertebrates
Shipment Process

- Marketing
- Receiving orders and negotiating pricing
- Quote and airline bookings
- Permits
- Packing and shipping
- Payment and DOA
Marketing – finding your customers

- Trade shows
- Website
- Word of mouth
- Direct contact
- Visiting buyers
Marketing

• For marine ornamentals variety is important. Especially if you can sell clams and corals or fish.
• This helps buyers to get volume without holding excess stock
• It also reduces paperwork and inspection and handling fees.
Marketing

- ORA – more than 70 species hard corals. 20 species soft corals. Clams and fish.
- Blue Zoo aquatics. 24 maricultured corals plus 55 SPS, 73 LPS.
- Direct marketing through internet sales is more popular. Petco.
Receiving orders and pricing

- The total a buyer pays is based not only on the cost of your products but also freight, handling, permits, mortality and volume.
- The sellers price will be affected by all of these so reducing costs to the buyer is important.
Working with a Buyer

- You are separated by large distances often with poor communications
- Insist on pre-payment on all shipments where you can, especially with new buyers
- Spend money to travel and meet your buyers or build your relationship
- Long-term business relationships are the best
Buyers always pay shipping

• Shares liability and responsibility
• Responsibility to get the animal there alive and healthy.
• You need to find the most efficient way to ship products to remain competitive.
Quotes and airline booking

• The buyer may ask for a quote including freight and handling
• Freight is generally expensive out of Micronesia
• Shipping regulations seem to change constantly due to TSA regs
• A box charge is usually added to the shipment cost to include cost of packaging and handling
• A permit fee may also be added for cost of obtaining the permits
• Airline freight varies with volume and how often you ship
• Shippers can get reduced freight rates with volume but cargo can be bumped
• Using freight forwarders such as CTSI, Triple B can help get your products to areas not served by Continental.
Permits and Paperwork

- CITES or in lieu of CITES – required for all hard corals and giant clams. Issued by marine resource authority in each country.
- Invoice – some buyers ask for a pro forma that reflects lower prices in order to avoid duties
- Certificate of origin – often included in lieu of CITES or export permit
- Health certificate – as above
- Airway Bill – issued by the airline and travels with the shipment
- Other permits such as export permit or permits required by the importing country are sometimes required
- Copies of all permits travel with the AWB and should be scanned and sent to buyer after the shipment has left
FSM National Government
Department of Resources and Development
Division of Agriculture Unit
Palikir, Pohnpei FM 96944
Tel. No.: (691) 370-2646
Fax No.: (691) 370-5854

Plant/Animal Quarantine Permit

Name and Address of Importee:
Martin Selch
Kosrae State, FSM 96944

Permit No.: KSA-002-11
Date of Issue: Feb. 28-11

In accordance with the Plant and Animal Laws (FSM) State, permission hereby granted for the following importation, subject to the conditions contained herein.

<table>
<thead>
<tr>
<th>Origin of Material(s):</th>
<th>Destination of Material(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pohnpei State, FSM</td>
<td>Kosrae State, FSM</td>
</tr>
</tbody>
</table>

Description of Materials and Quantity:

- **Live Corals/Clams:**
  1. Soft Corals (Sarcophyton spp) — 500 pcs
  2. Giant Clams (Tritacna maxima) — 500 pcs
  3. Giant Clams (Tritacna derasa) — 500 pcs
  4. Hard Corals (Montipora spp) — 500 pcs

Conditions of Entry:

- This Permit is valid for a multiple entries or six months from the above date of issue, but may be withdrawn at anytime. A copy of this Permit with a Certificate of Origin issued at the place of origin must accompany the shipment and presented to the Quarantine Inspector at the port of entry.

- The Certificate of Origin should specify that:
  1. Shipment was originated and raised in Pohnpei State. Thoroughly inspected and found to be healthy, clean, free of other living organisms and packed in new packing materials, and the number stated in the Certificate of Origin should match the number shipped or sent.

- A copy of this Permit together with a Certificate of Origin issued by Pohnpei State Government should accompany the shipment and presented to the Quarantine Officer upon arrival here in KSA.

- Shipment should be re-inspected upon arrival to ensure that all condition/requirement in Import Permit are met and/or complied with.

Permit Fee: $20.00

<table>
<thead>
<tr>
<th>Permit Issued by: (Name and Title)</th>
<th>Approval Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murphaniel T., Acting / Director of Resources and Economic Affairs</td>
<td>2/2/11</td>
</tr>
</tbody>
</table>

Distribution List: Original-Permittee, 1st copy to Shpper, 2nd copy-State Agriculture, 3rd copy-Issuer
To: Martin Selch, MME  
Causeway, Lelu,  
PO Box 807 Kosrae FM 96944

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Unit Price</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td><em>Sarcophyton spp.</em></td>
<td>$3.00</td>
<td>$900.00</td>
</tr>
<tr>
<td>400</td>
<td>3-4 cm T. maxima blue</td>
<td>$5.00</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>6</td>
<td>Shipping boxes</td>
<td>$20.00</td>
<td>$120.00</td>
</tr>
<tr>
<td>1</td>
<td>Document fee</td>
<td>$20.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>1</td>
<td>Freight</td>
<td>$150.00</td>
<td>$150.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
</tbody>
</table>

Total $3,190.00

Please make checks payable to MERIP  
Thank you for your business
DEPARTMENT OF RESOURCES & DEVELOPMENT
Federated States of Micronesia
P.O. Box PS-12
Palikir, Pohnpei FM 96941
Phone: (691) 320-2646/5133/2620; Fax: (691) 320-5854/2079
E-mail: fsmrd@fsmrd.fm

1. Exporter
MERIP
PATS Campus
Tamuning, Pohnpei
FM 96941
Federated States of Micronesia
Tel. 691-320-7630

2. Importer
Marshall Island
Mariculture Farm
1. Clam Avenue
Makato, MH 96960
Republic of the Marshall Islands
Tel. 692-247-2526

CITES PERMIT
3. Permit No.: PFM12-02-01

4. Date of Issue: 15-Feb-12
5. Valid until: 15-Jul-12
6. Purpose: Commercial

7. Country of Origin
Federated States of Micronesia
Pohnpei - FSM

8. Country of last Re-Export
N/A

9. Permit No: N/A
10. Date of Issue: N/A

11. Scientific Name
1. Sarcophyton spp 600 pcs. LIVE F 2
2. Acropora echinata 50 pcs. LIVE F 2
3. Acropora tenua 200 pcs. LIVE F 2
4. Acropora granulosa 150 pcs. LIVE F 2
5. Pachycerianthus 50 pcs. LIVE F 2
6. Meropora spp 100 pcs. LIVE F 2
7. Pocillopora spp 100 pcs. LIVE F 2
8. Goniopora spp 50 pcs. LIVE F 2
9. Agaricia agaricites 50 pcs. LIVE F 2
10. Agaricia lamarckii 50 pcs. LIVE F 2
11. Turbinaria spp 50 pcs. LIVE F 2
12. Acropora ferox 50 pcs. LIVE F 2
13. Acropora arbuscula 50 pcs. LIVE F 2
14. Acropora digitifera 50 pcs. LIVE F 2
15. Acropora madja 50 pcs. LIVE F 2
16. Acropora nobilis 50 pcs. LIVE F 2
17. Hippopora spongiosa 50 pcs. LIVE F 2
18. Tetracenia mexicana 300 pcs. LIVE F 2
19. Acropora solida 50 pcs. LIVE F 2
20. Euphyllia paradivisa 50 pcs. LIVE F 2

FOR OFFICIAL USE ONLY

I am satisfied that the export/Import of the specimen described herein will not be detrimental to the survival of the species and that the specimen was not obtained in contravention of the laws of the Federated States of Micronesia.

Valentin A. Martin, Deputy Assistant Secretary
Office of Marine Resources
Division of Resource Management and Development
Department of Resources & Development
PSM Government, Palikir, Pohnpei FM 96941
Place / Date: 2-15-12

NOTE: All exported Corals are fragmented corals on artificial rocks and made out of F1 generations.

Management Authority's Official Stamp

NOTE: All Tridacidae clams were spawned and reared in captivity at the Marine and Environmental Research Institute of Pohnpei.

Quarantine Official
Name: Anthony S. Taimas
Place: Palikir, Pohnpei
Date: 2/17/12
CERTIFICATE OF ORIGIN AND EXPORT PERMIT

Date: 2/10/11

Exporter:
Marine and Environmental Research Institute of Pohnpei (MERIP), P.O.Box 1005, Tamorobei, Pohnpei, FM 96941. Tel 691-320-7948

Importer: MMME, NAC, Causeway, Lelu, Kosrae, FM 96944

Description of items for export:

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Quantity (Pieces)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarcophytos spp</td>
<td>600</td>
</tr>
</tbody>
</table>

I am satisfied that the export/import of the specimen described herein will not be detrimental to the survival of the species and that the specimen was not obtained in contravention of the laws Pohnpei, Federated States of Micronesia.

NOTE: All exported corals are fragmented and grown from F1 generations. All Tridacnid clams were spawned and reared in captivity at the Marine and Environmental Research Institute of Pohnpei.

Shipment may contain less than permitted amount.

[Signature]

Hernet Ringlen
Acting Administrator
Office of Fisheries & Aquaculture
<table>
<thead>
<tr>
<th>NO.</th>
<th>RCP</th>
<th>GROSS WEIGHT</th>
<th>CLASS WEIGHT</th>
<th>CHARGEABLE WEIGHT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>CMR</td>
<td>232</td>
<td>105.5k</td>
<td>2.30</td>
<td>242.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LIVE CLAMS &amp; CORALS</td>
</tr>
</tbody>
</table>

**Shipping Details**

- **Shippers Name and Address:** SIMON ELLIS, MERIP
- **Shippers Account Number:** 005 1061 8860
- **Freight Prepaid:** CK#4640
- **Guam Airport**: Guam Airport

**Nature and Quantity of Goods (Including Dimensions or Volume):**

- **Nature of Goods:** LIVE CLAMS & CORALS

**Total Charge:** $329.39

**Date:** 10 MAY 11

**Shippers Signature:** PNIFCO

**Terminal:** MHN1P
Shipping
Problems Associated With Shipping

• Many of the mortalities associated with the MO industry are related to poor shipping and handling practices

• Shipping is very expensive in the Pacific Islands and cargo capacity is often limiting

• Infrastructure can be poor

• Losses during shipping not only have economic consequences but also environmental impact
Chain of Custody - Source

- Wild Collection
- OR
- Farm Raised
Chain of Custody - Local

- Animals are sold on to a local exporter or wholesaler.
- Sometimes they are held in poor conditions, often in the ocean for up to one week.
Chain of Custody - Local

- Many local export stations are large and well equipped.
Chain of Custody - Local

• Others are more simple in nature
Chain of Custody – Wholesaler and Retail

- Animals are shipped to wholesaler usually in the USA or EU
- Wholesaler then ships onto the retailer shops
- Direct marketing via the Internet is increasingly used.
Packing Methods

- Technology remains essentially unchanged
- Animals are packed in water in plastic bags
- Bags are inflated with oxygen
- Oxygen:water ratio ranges 4:1 to 6:1
- Temperature stability is provided by insulated boxes
- Additives such as ammonia strippers, antibiotics and pH buffers can be added to the shipping water.
- Most animals are shipped singly or in low numbers per bag
Causes of Mortality – Stress Prior to Shipment

- Repeated handling of the animals during collection, rapid temperature changes, overcrowding, oxygen deprivation and trauma can all stress the animals prior to shipping.
- Implementation of best management practices and training for collectors, exporters and brokers.
- Ensure the animals are healthy before shipment through observation or stress testing.
Causes of Mortality - Metabolites

- During the shipping process build up of metabolites is the greatest stressor.
- Oxygen is rarely a limiting factor.
- Ammonia and Carbon dioxide build up are the main problems.
- High Carbon dioxide and low pH affect the oxygen carrying capacity of blood.
- Bacterial blooms can also cause latent infection.
Metabolite Reduction

- Use of sufficient water to buffer metabolites
- Food deprivation for 24-72 hours prior to shipment to reduce Ammonia excretion
- Pre-shipment dips and baths
- Treatment of shipping water with UV and protein skimming
- Reducing shipping water temperature
- Use of ammonia "strippers"
- Buffers to control pH
- Antibiotics to reduce bacterial blooms
- Anesthetics can reduce stress
Metabolite Reduction

• The use of anesthetics and buffers in the MOI is not well documented and the misuse of these can cause entire shipment failure.

• Generally most shippers use no additives and prefer to manage the water quality using water temperatures and stocking density.
Acclimation

- This is critical phase for receiving animals
- Bags are floated in the receiving water for up to one hour to stabilize the temperature
- Avoid harsh light or sunlight
- Once the shipping bag is opened, carbon dioxide will dissipate, increasing the pH and toxic ammonia content of the water
- Dip fish immediately into the receiving water and discard the shipping water
Damp or Dry Shipping

- The cost of shipping water is often higher than the value of the animal being shipped.
- Some species can be shipped without water.
- Soft corals, corallimorphs and zooanthids are wrapped in damp paper towel.
- Hard corals are wrapped in “bubblewrap”.
Payment and DOA

• Where possible insist on pre-payment
• A certain amount of mortality (5-10%) is acceptable and should be agreed upon before shipping
• A buyer may claim Dead on Arrival (DOA) for amounts over this. Usually photographic evidence is provided and credit is given for the next shipment (livestock only)
• Getting payment from some buyers can be a problem