MAINE AQUACULTURE

LOCAL - HEALTHY - SUSTAINABLE

GROWING MAINES FUTURE BY FEEDING AMERICA
World Population Growth

RISING LIVING STANDARDS

**Developing countries with fastest growing “middle class”**

- China
- India
- Brazil
- Indonesia
- Russia
- Egypt
- Thailand
- Mexico
- Turkey
- Vietnam
- Philippines
- Iran
- Poland
- Nigeria

Households with real PPP incomes greater than $20,000 (in millions)

Source - USDA Foreign Agricultural Service
WATER - NUTRIENTS

MAINE AQUACULTURE ASSOCIATION
The World Needs to Close a 70% Food Gap

70% REQUIRED INCREASE in food calories to feed 9.7 billion people by 2050

2006 2050

wri.org/shiftingdiets
75% OF EARTHS SURFACE IS WATER

ALL FOOD IS CURRENTLY GROWN ON <8% EARTHS SURFACE AREA

MOST SOLAR RADIATION HITS THE EARTH IN UNFARMED AREA
EFFICIENCIES OF DIFFERENT ANIMAL PROTEIN SECTORS
INPUT REQUIREMENTS TO PRODUCE 1 KG RAW PRODUCT

8 kg feed
1857 gallons

1.1 kg feed
132 gallons

2 kg feed
469 gallons

0 kg feed
.01 gallons

3 kg feed
756 gallons

AQUATIC ANIMALS 10-20% MORE EFFICIENT THAN LAND ANIMALS

ONE ACRE OF FARMED MUSSELS PRODUCES 1000 X MORE MEAT THAN ONE ACRE OF GRAZING LAND FOR CATTLE
EFFICIENCIES OF DIFFERENT PLANT PRODUCTION

FRESHWATER REQUIRED TO PRODUCE 1 KG RAW PRODUCT

Wheat 1500 Liters
Corn 1400 Liters

Rice 4700 Liters
Seaweed .01 Liters

10% MORE EFFICIENT THAN LAND PLANTS
LITTLE OR NO FERTILIZER REQUIRED
LITTLE OR NO FRESHWATER REQUIRED
SHARE OF CONSUMPTION SUPPLIED BY DOMESTIC PRODUCTION

% Domestically Sourced

Beef, Chicken, Pork, Turkey, Seafood, Aquaculture

Source: USDA2010, USDOC2012
COASTAL COMMUNITIES ARE CHANGING
INCREASED RESIDENTIAL DEVELOPMENT
# COMMERCIAL FISHING PERMITS
<25 MILES OF WORKING WATERFRONT LEFT

ONE OF LONGEST COASTLINES IN U.S.
MAINE HAS >130 MILLION CUSTOMERS WITHIN 24 HOURS
MAINE AQUACULTURE

- FRESH WATER AND SALTWATER
- >25 SPECIES GROWN
- ± 1300 ACRES <.003% STATE WATERS

NUMBER OF LEASE SITES 2016
- 26 FINFISH
- 57 SHELLFISH
- 19 EXPERIMENTAL
- ≈290 LIMITED PURPOSE LICENSES ???

EMPLOYMENT 2002 03 14
- DIRECT 600 524 571
- INDIRECT 800 837 507

ECONOMIC IMPACT ($millions) 2002 03 14
DIRECT FARM GATE 56.9 81.9 73.4
INDIRECT 48.6 64.3
TOTAL 130.5 137.7
OUR FARMS ARE EMBEDDED IN THE ECOSYSTEM THEY DEPEND ON

MUSSELS AND SCALLOPS

MACROALGAE

FISH

OYSTERS, MUSSELS, URCHINS, WORMS AND SEA CUCUMBERS
ANIMAL/PLANT ENVIRONMENTAL LINKAGES

Diagram showing the relationship between homeostasis, compensation, disease, stress, imbalance, break, intoxication, lethal concentration, risk threshold, normal range, and good health.
KEY AQUACULTURE BMP CATEGORIES

- Site Selection
- Site Monitoring and CC Assessment
- Feed Management
- Nutrient Management
- Water Management
- Waste Management
- Site Rotation and Fallowing
- Animal/Plant Health Management
- Escape Prevention and Response
- Wildlife Interaction Management
Environmental Management System

Elements of a Successful Environmental Management System

Goals and Objectives
Continual Improvement
Environmental Policy
Gaps and Needs Analysis
Planning
Implementation and Operation
Management Review
Checking and Corrective Action
WE HAVE ALWAYS BEEN LOCAL

GROWN IN USA

EAT LOCAL SEAFOOD

WE HAVE ALWAYS BEEN LOCAL
MAINE AQUACULTURE

GROWING MAINES FUTURE

GOOD JOBS - RESPONSIBLE STEWARDSHIP - HEALTHY FOOD