

The Region

- Nunavik is the land and coastline of Northern Quebec
- The region was established to allow Inuit to manage socio, economic and local political issues
- 4500 years of habitation by Inuit from Pre Dorset times

Nunavik



Structures for Development

- James Bay and Northern Quebec Agreement 1975
- Special funding for Nunavik
- Makivik corporation formed in 1978 manages James Bay funding

Nunavik Biosciences Inc (NBI)

- Nunavik Biosciences is a wholly owned subsidiary of Makivik corporation
- Mandate to provide research and development of biological resources of Nunavik
- NBI has chosen seaweeds as a group with commercial potential
- NBI has the goal of providing development of marine resources that is sustainable, ecologically responsible and culturally sound for Nunavik villages

Potential


- Seaweeds are the basis for a very diverse world wide industry worth 6 billion dollars
- Uses range from fertilizers, food additives, pharmaceuticals, nutraceuticals, and cosmetics
- Seaweeds have been a component of the traditional Inuit diet



Challenges to Development

- Isolation of villages
- Distance from market
- Limited means of transport
- Costs of materials and supplies
- Limited time for harvest and processing
- 6-7 months ice cover

Positive factors

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- An extensive unutilized resource
 - A local young labour force
 - Local marine infrastructure
 - Tradition of work on the water and manual gathering
 - Local knowledge
 - A great need for local sustained economic activity
 - Large intertidal zone

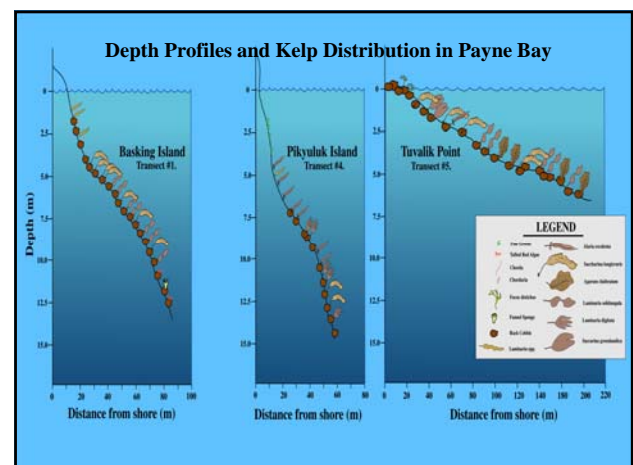


Study Components

- **Intertidal survey of Fucoid species**
- **Sub tidal survey of Kelp species**
- **Preliminary studies of growth and production**

Sub tidal Survey

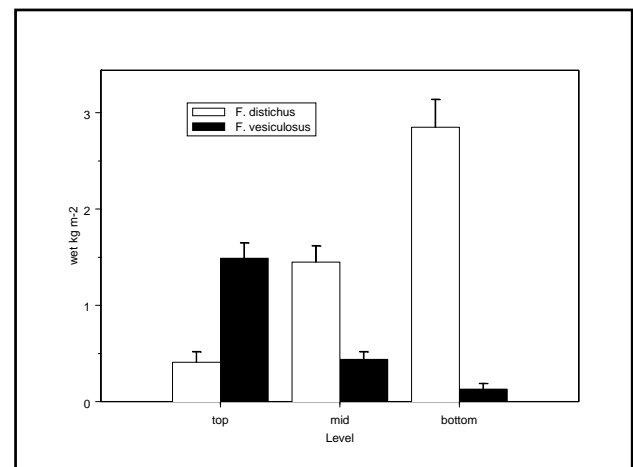
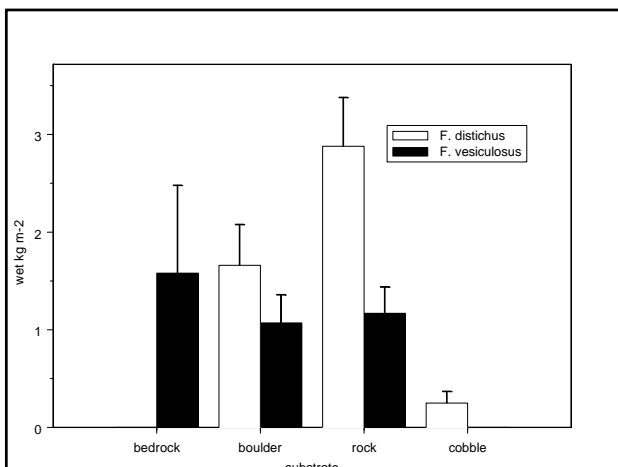
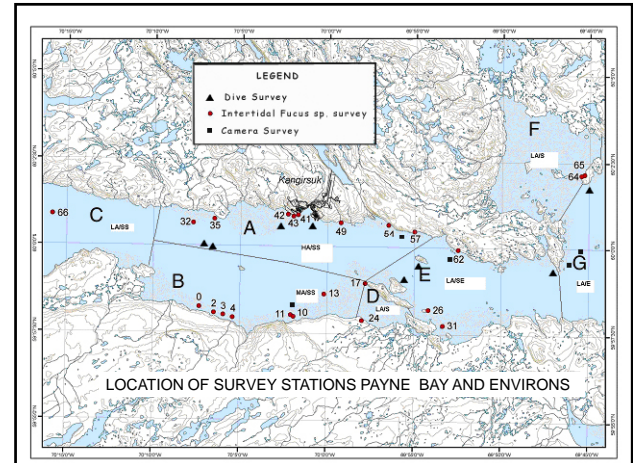
- 12 drop camera sites
 - Qualitative < 1 m⁻², 1- 5 m⁻² >5 m⁻²
- 12 representative dive sites
 - Transect from -3m to 15 m dept
 - Qualitative < 1 m⁻², 1- 5 m⁻² >5 m⁻²
 - Quantitative 4 sites sampled 6 samples 3m, 5m, 10 m



Methods

Intertidal survey

- 3 transects top mid and bottom of Furoid zone
- 6 .25 m² samples per transect
- Furoid biomass wet weight, substrate classification
- Total samples 460



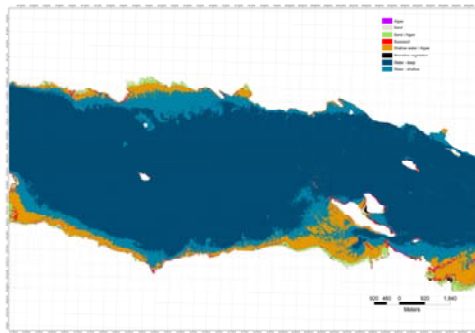
Conclusions

- **Patchiness in Fucus resources**
 - Relief of substrate critical to development of standing crop
 - Mixed boulder rock substrates provide protection from the ice
 - Plants loose floatation to avoid ice scour
 - Plants recover from basal tissues after loss of large portions of thallus

REMOTE SENSING ASSESSMENT



Quick Bird Satellite Image Analysis



Fucus Resource

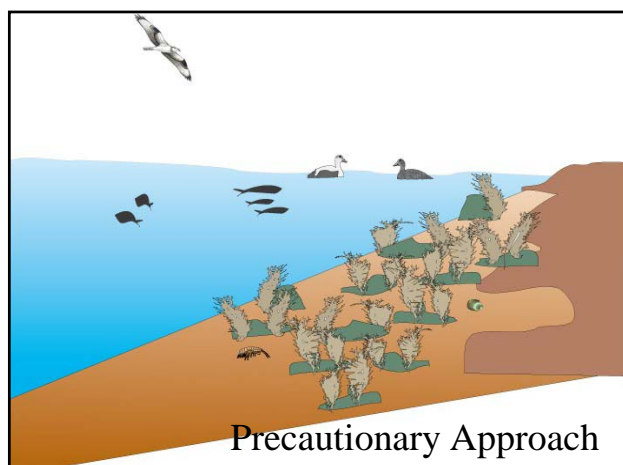
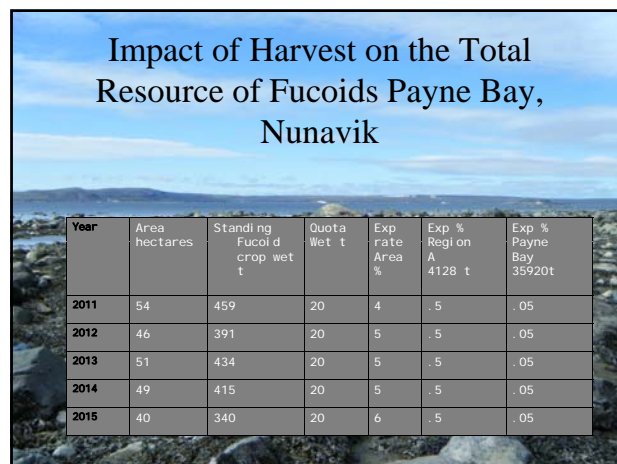
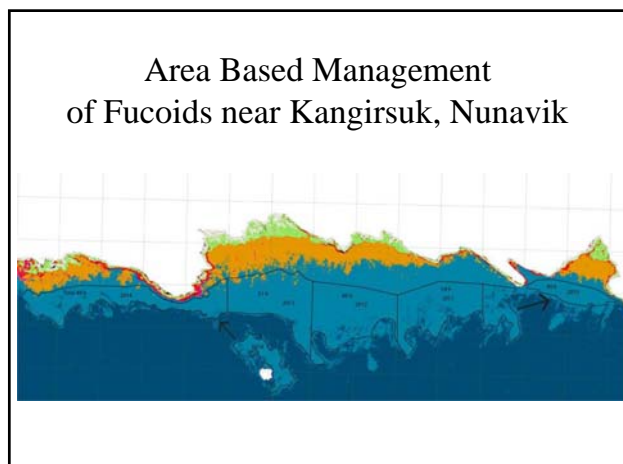
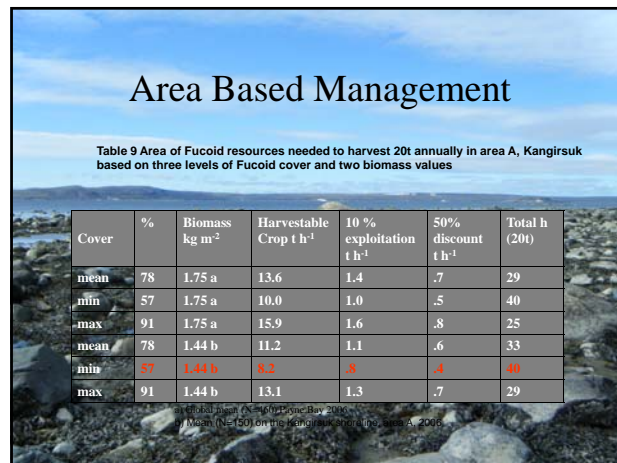
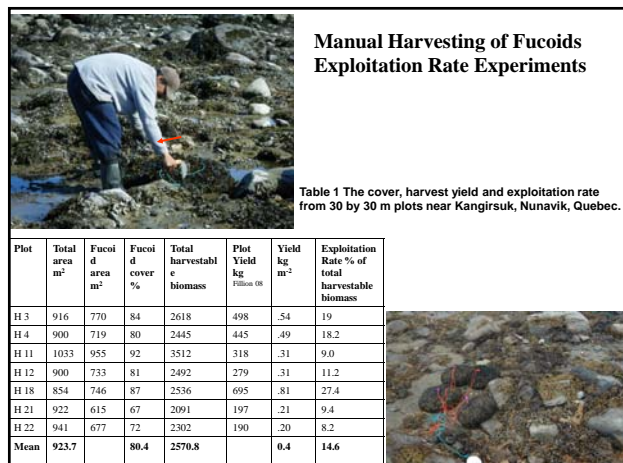
- The resource is abundant and wide spread
- There is one site in the bay where infrastructure and people are available to harvest
- The access to the resource is limited to 2-3 hours per day
- The harvest and sun drying season is short

Table 5 Estimates of Fucoid cover total standing crop and harvestable standing crop of *Fucus evanescens* Fe and *Fucus vesiculosus* Fv in Kangirsuk and environs. August 2005

Area	Access wave exposure	Fucoid cover ha	Total Standing Crop Fucus evanescens Fe t	Total Standing Crop Fucus vesiculosus Fv t	Harvestable t		Metric tons Annually Harvestable at 10% exploitation	
					Fe	Fv	Fe	Fv
A	HA/SS	227	3563	1565	3563	1565	356	156
B	MA/SS	1568	24110	10744	12055a	5372a	1205	537
C	LA/SS	661	9254	2908	4627a	1454a	463	145
D	LA/S	1309	20109	9028	5027b	2257b	503	226
	TOTAL	3765	57036	24245	25272	10648	2527	1064

DEVELOPMENT ?

- **Not industrial scale**
 - Limited transportation
 - Limited infrastructure
 - Limited labour force
 - High cost resource
- **A scale to fit with traditional hunting and gathering**
 - Specialty products
 - cosmetics
 - Food stuffs
 - Bio reactives



LOCAL CONTROL Integrated Co-Management

- Inuit/Quebec/Federal Agreement allows control of marine resources of Nunavik (2010)
- Kativik Regional Government
- Management committees 80% Inuit
 - Nunavik Wildlife Management Board
 - Nunavik Environmental Impact Review Board
 - Integration of southern science and traditional ecological knowledge and cultural realities

The Village of Kangirsuk



Kangirsuk Demographics (2006)

- Population 465
- 25% under the age of 25
- Unemployment rate 26.3%
- 96.5% of employment related to community services and management

PROCESSING MARKETING



THE FUTURE



THANK YOU

