

BSIERP and BEST Workshop

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NOAA Alaska Fisheries Science Center

Juneau, Alaska

Principal Investigators meeting, Anchorage, Alaska, January 20, 2008

Agenda

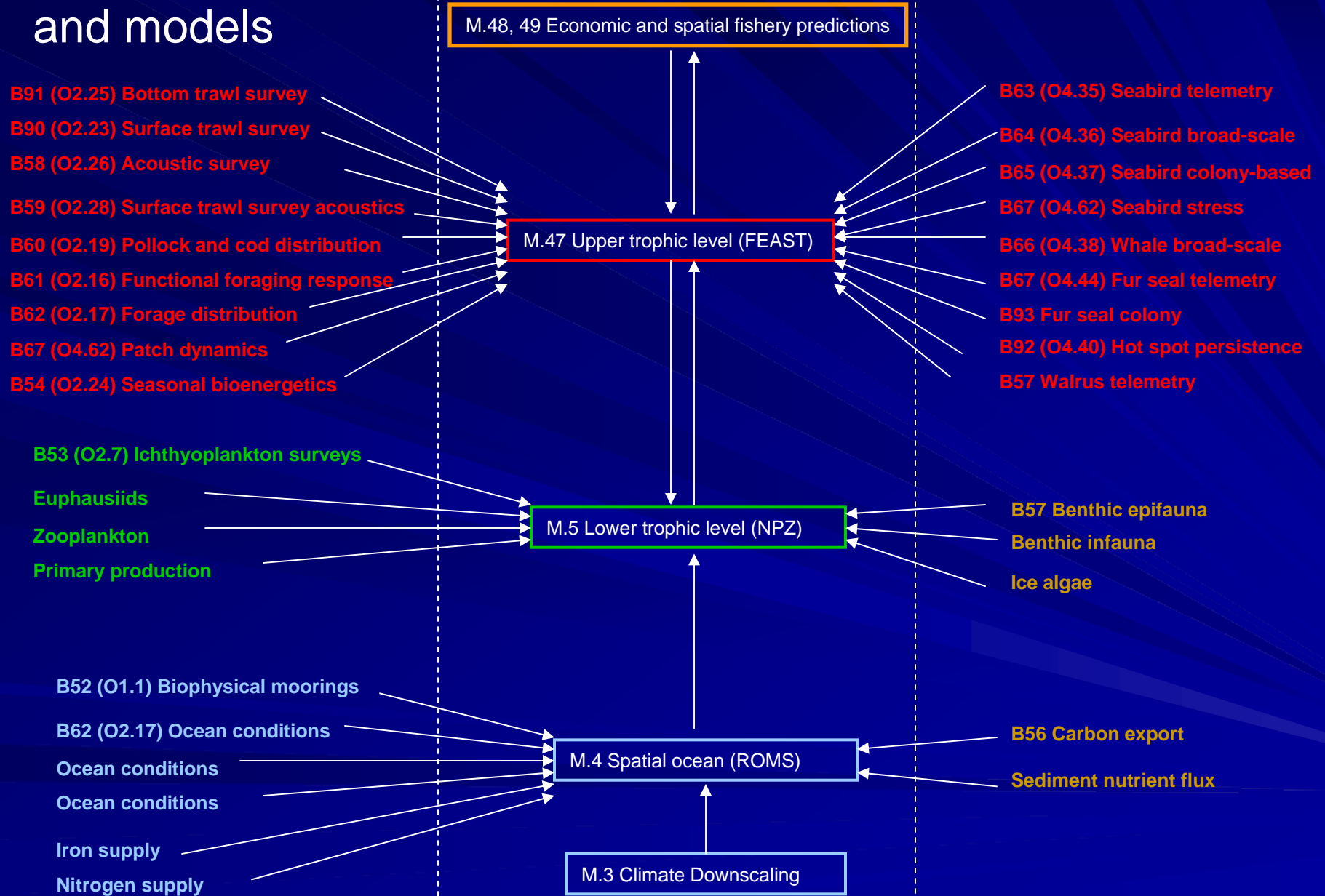
- Match field data and models, data templates (Aydin, Bond, Coyle)
- BEST overview (Ashjian)
- Integration of BEST and BSIERP
- Manuscript titles or descriptions
- Study synthesis
- What do PIs desire from NPRB Program Management?

Goals

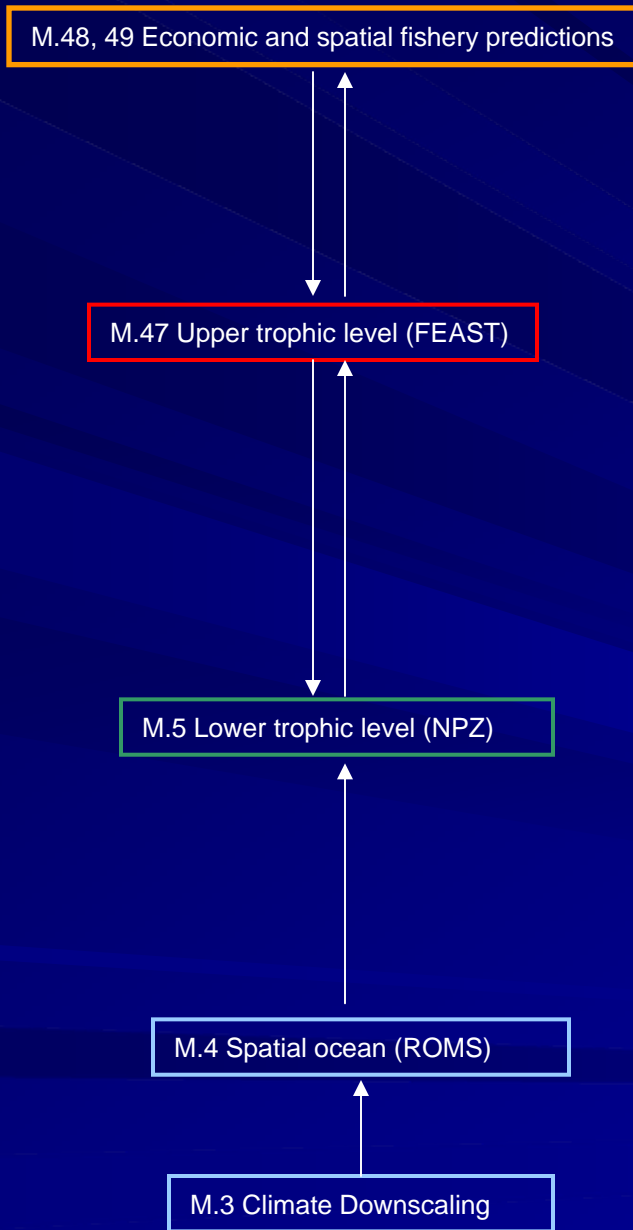
- Understand interface between modelers and data collection
- Understand integration between BSIERP and BEST
- Manuscript titles or descriptions

Match field data and models

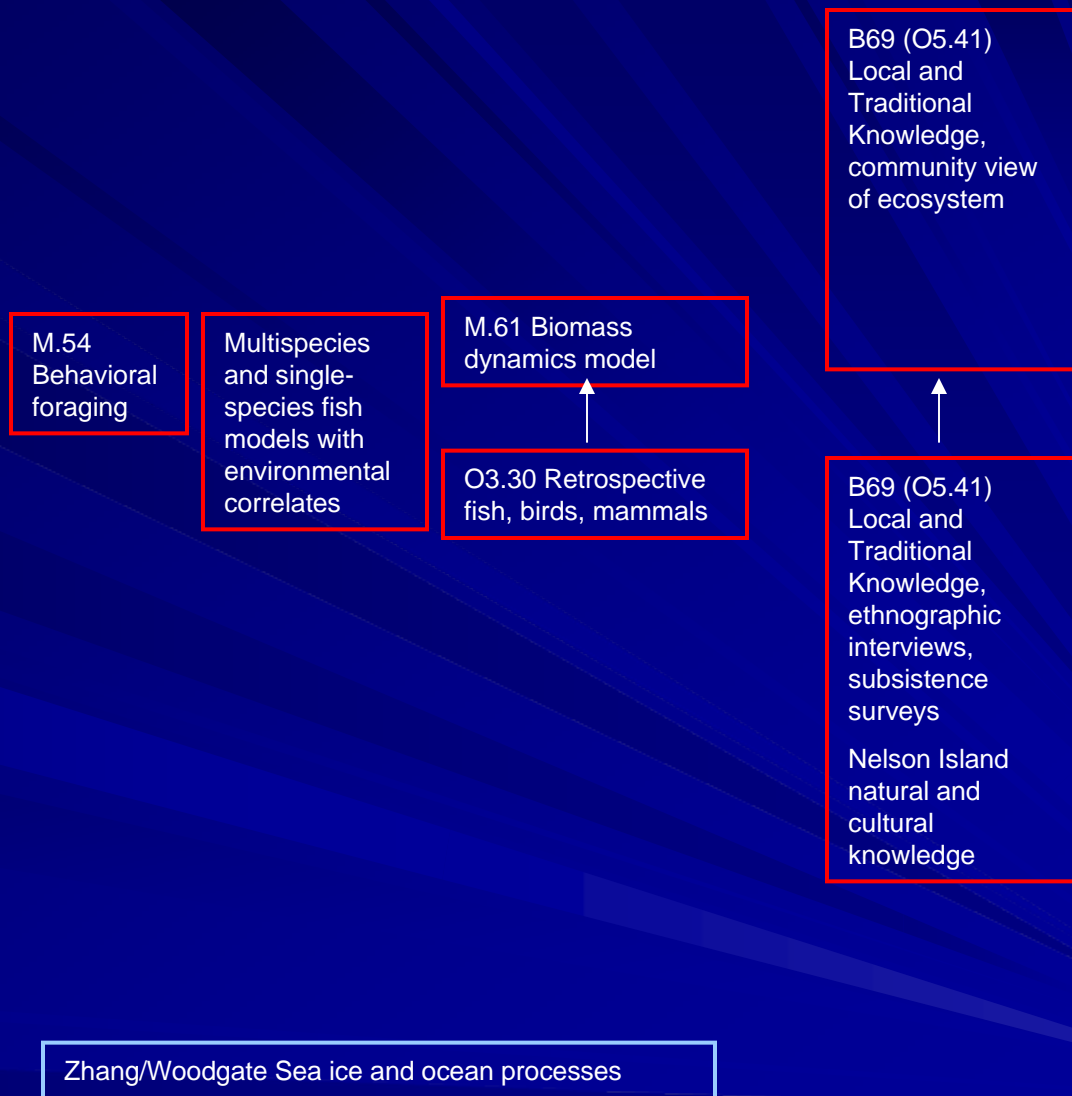
VERTICALLY-INTEGRATED MODEL



VERTICALLY-INTEGRATED MODEL



COMPETING MODELS



Data Inventory = Handshake

NPRB Project #	proj_component	data_being collected	data_parameters collected
B52 - Stabeno	Moorings	Physical chemical and biological time series at the moorings and hydrography along the transects and zooplankton at and around mooring sites.	Moorings measurements: T S fluorescence nitrate currents and on selected moorings oxygen and acoustic zooplankton abundance. During summer wind velocity air temperature humidity PAR barometric pressure are measured at 1 or 2 sites. The hydrographic transects measure T S fluorescence chlorophyll nutrients oxygen and PAR. Zooplankton measured at mooring sites.
B53 - Hillgruber	Ichthyoplankton surveys	Horizontal distribution of mesoplankton and ichthyoplankton. Vertical distribution of fish larvae and microzooplankton prey. Tracklines underway of T S fluorescence and limited vertical distribution of chlorophyll (SeaCat CalVET oblique bongo tows vertically integrated bongo tows MOCNESS vertically stratified tows Neuston surface tows satellite-tracked drifters 0.25 m ² multiple opening/closing MultiNet/E (MN HydroBios) equipped with five 1 000 μm mesh nets surface trawls echo integration-trawl surveys)	abundance distribution

- data_being collected
- data_parameters collected
- data_units
- data_derived product
- data_required from other PIs
- data_required complementary data
- BSIERP or BEST hypotheses addressed
- focal_question
- sampling_locations
- sampling_time
- data_resolution
- data_purpose
- data_format
- realtime
- data_availability to other PIs in program
- limits to sharing with other PIs
- special handling
- data_modeling_requirements
- data_longterm/retro data requirements
- comments
- PI name, affiliation, address, email

Data template

Institution	Study area	Day or night	Substrata	Cruise	Transect	Species name	Mid-point depth interval (m)	Biomass density (mt nmi ⁻²)	Energy density (tJ nmi ⁻²)	Number density (# nmi ⁻²)
ABL	Frederick Sound	Day	Frederick Sound	200301	1	Hake	365	26,448	129	32,926
ABL	Frederick Sound	Day	Frederick Sound	200301	2	Hake	375	6,591	28	7,522
ABL	Frederick Sound	Day	Frederick Sound	200301	3	Hake	385	4	0	5
ABL	Frederick Sound	Day	Frederick Sound	200301	4	Hake	395	2,981	13	6,042
ABL	Frederick Sound	Day	Frederick Sound	200301	5	Hake	405	4,440	20	7,072
ABL	Frederick Sound	Day	Frederick Sound	200301	6	Hake	415	15,216	76	25,065
ABL	Frederick Sound	Day	Frederick Sound	200301	7	Hake	425	3,506	16	5,941
ABL	Frederick Sound	Day	Frederick Sound	200301	8	Hake	435	9,079	38	14,056
ABL	Frederick Sound	Day	Frederick Sound	200301	9	Hake	445	1,958	10	1,577

Complete?

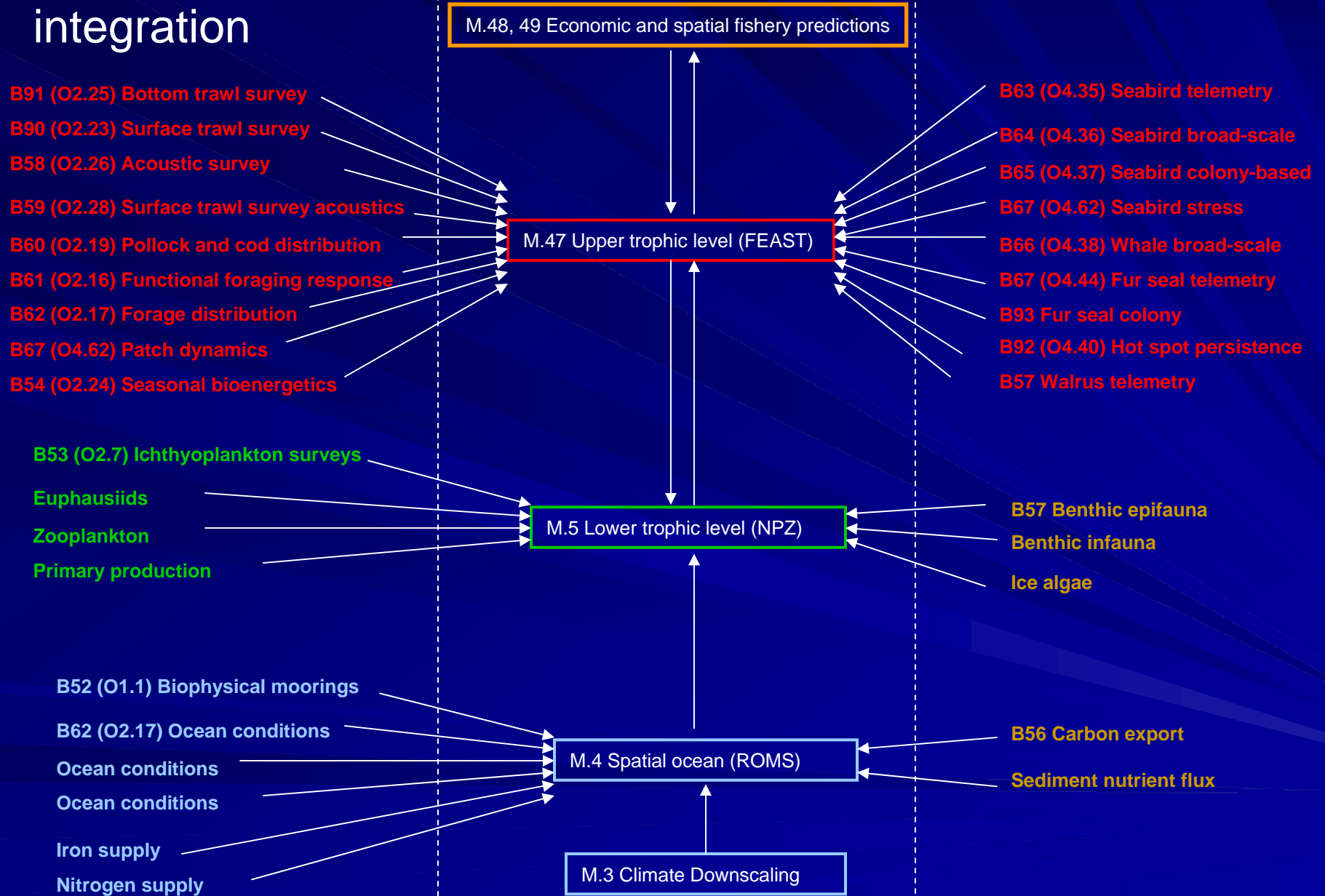
- Match field data and models (Aydin, Bond)
- Data templates (Coyle)

BEST overview

■ Carin Ashjian

BEST and BSIERP integration

VERTICALLY-INTEGRATED MODEL



5 BSIERP hypotheses

- Climate-induced changes in physical forcing will modify the availability and partitioning of food for all trophic levels through bottom-up processes.
- Climate and ocean conditions influencing water temperature, circulation patterns and domain boundaries impact fish reproduction, survival and distribution, the intensity of predator-prey relationships and the location of zoogeographic provinces through bottom-up processes.
- Later spring phytoplankton blooms as a result of early ice retreat will increase zooplankton production, thereby resulting in increased abundances of piscivorous fish (pollock, cod and arrowtooth flounder) and a community controlled by top-down processes [Oscillating Control Hypothesis] with the possible trophic consequences:
- Climate and ocean conditions influencing circulation patterns and domain boundaries will affect the distribution, frequency and persistence of fronts and other prey-concentrating features and thus the foraging success of marine birds and mammals largely through bottom-up processes.
- Climate-ocean conditions will change and thus affect the abundance and distribution of commercial and subsistence fisheries.

BSIERP + BEST

- Seasonal
- Location matters
- Trophic interactions
- People
- Spring ice-related
- Benthos



Identify collaborations

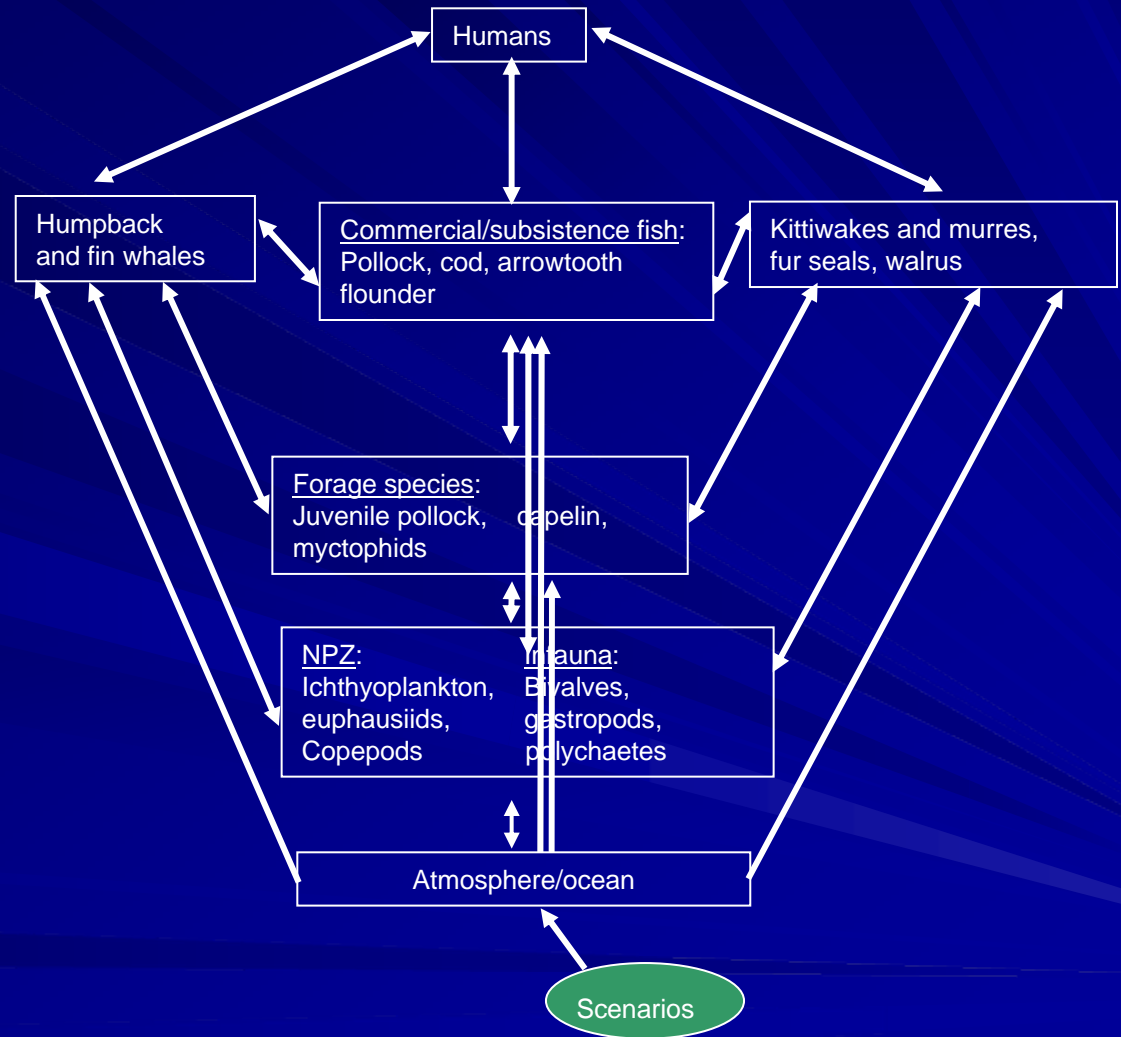
- BEST euphausiid project (Lessard, Harvey)
- Forage distribution and ocean conditions (Hollowed et al.)
- Seasonal bioenergetics (Heintz et al.)

Promote collaboration

- PI workshop (January 2008)
- ASLO/AGU workshop: Understanding climate impacts in sub-arctic seas (Hunt et al.; March 2008)
- Healy cruises (March and May 2008)
- PI meeting (January 2009)
- SAB meetings (monthly, phone)

Study synthesis

- Timing
- Goal



Focal species examined in field studies and linked through models.

NPRB Program Management

- What do PIs desire from NPRB Program Management?

