BACKGROUND

• **SAB received Oceans and Human Health Initiative briefing at your July 2008 meeting**
  – Initiated an Oceans and Health Working Group to help focus NOAA’s mission in this area
  – Three members of the SAB plus eight subject area experts

• **OHWG provided six charge questions**
  – All focus on what, if any, role NOAA should have with respect to Oceans and Health

• **Specified our charge as human and organismal physiological health**
  – Avoid overlap with the Ecosystem Sciences and Management Working Group that is dealing with population and ecosystem health
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OHWG MEMBERS

Dr. Lorraine Backer  National Center for Environmental Health, Center for Disease Control and Prevention
Dr. Daniel Baden  Director of the Center for Marine Science, University of North Carolina at Wilmington
Dr. Shannon Briggs  Michigan Department of Natural Resources and Environment
Dr. Thomas Chandler  Dean, Arnold School of Public Health, University of South Carolina
Dr. Rita Colwell  Center for Bioinformatics and Computational Biology
Dr. David Fluharty  School of Marine Affairs, University of Washington
Dr. Frances Gulland  The Marine Mammal Center
Dr. Frank Kudrna, Jr.  Kudrna & Associates
Dr. David Letson  University of Miami
Dr. Carolyn Thoroughgood  Vice Provost for Research, University of Delaware
Dr. Stephen Weisberg  Southern California Coastal Water Research Project
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OHWG CHARGE QUESTIONS

1) What are NOAA’s unique and important scientific roles in addressing ocean health issues?

2) What are the right ocean health science questions, products and services for NOAA?

3) Are there additional ocean health science issues that should be included in the NOAA research portfolio? If so, what are these?

4) What are the appropriate steps for NOAA to incorporate and advance ocean health as part of its core mission?

5) How could NOAA more systematically develop ocean health products and services to enhance ecosystem, organism, human, and community health?

6) How can NOAA better integrate among its major programs, including activities conducted within the agency and those supported in the external community, to better define and assess ocean health issues?
OHWG PRESENTATIONS TO THE SAB

• **Initial Findings (July 2009)**
  – SAB had a positive reaction
  – Encouraged OHWG to proceed with a written report

• **Draft written report (Oct 2009)**
  – Liked the report, but asked for some revisions prior to requesting public comment

• **Final report being presented to you today**
  – Revised in response to your suggestions
  – Also responded to public comments
SAB REVISION REQUESTS

- **Place more emphasis on rationale for recommendations**
  - Budgets are finite and health must compete with other NOAA programs
  - SAB only wants to recommend high priority items
  - SAB agreed with the OHWG recommendations but felt the rationale was buried in the appendices and needed to be brought forward

- **Need better explanation of terms**
  - Oceans and Health
  - One Ocean, One Health

- **The OHWG re-structured the report to address these comments**
FINDING #1: THERE IS A NEED FOR ACTION

- Changes in ocean acidity, temperature and salinity are affecting the balance of risks and benefits from the sea
FINDING #1: THERE IS A NEED FOR ACTION

- Changes in ocean acidity, sea surface temperature, and salinity are affecting the balance of risks and benefits from the sea

- PATHOGENS: The geographic range of marine pathogens is changing
FINDING #1: THERE IS A NEED FOR ACTION

• Changes in ocean acidity, sea surface temperature, and salinity are affecting the balance of risks and benefits from the sea

• PATHOGENS: The geographic range of marine pathogens is changing

• TOXINS: Harmful algal blooms are increasing in frequency and intensity
  – Inhalation of *Karenia brevis* toxins leads to beach closures
  – *Microcystis* threatens Great Lakes drinking water
FINDING #1: THERE IS A NEED FOR ACTION

- **COASTAL FLOODING**: Increased intensity of tropical storms
  - Loss of life and property from storm surge
FINDING #1: THERE IS A NEED FOR ACTION

- Changes in ocean acidity, sea surface temperature, and salinity are affecting the balance of risks and benefits from the sea.
- The geographic range of marine pathogens is changing.
- Harmful algal blooms are increasing in frequency and intensity.
  - Inhalation of Karenia brevis toxins leads to beach closures.
- Increased intensity of tropical storms.
  - Loss of life and property from storm surge.
- FOOD SAFETY: Increased importation of seafood has led to higher risk of food pathogens and toxins.
  - Importation from countries with lesser food quality and handling standards.

Source: NOAA, 2009

U.S. Seafood Imports and Exports, by Volume

Top Areas the U.S. Imports From, 2008, by Volume

- Asia: 60%
- North America: 18%
- South America: 13%
- Europe: 4%
- Oceania: 4%
- Africa: 1%

Source: NOAA, 2009
FINDING #2: NOAA IS WELL-POSITIONED TO MEET THE NEED

• NOAA is the only agency with the capability and responsibility to ensure a holistic ocean health science and management strategy
  – Other organizations have pieces
  – No other organization has the integration responsibility

• NOAA has unique and important technical capabilities

• NOAA has the mission

• NOAA has demonstrated experience partnering with other agencies that have complementary skills and responsibilities
FINDING #2: NOAA IS WELL-POSITIONED TO MEET THE NEED

- NOAA is the only agency with the capability and responsibility to ensure a holistic ocean health science and management strategy. Other organizations have pieces, but no other organization has the integration responsibility.

- NOAA has unique and important technical capabilities.

- NOAA has the mission.

- NOAA has demonstrated experience partnering with other agencies that have complementary skills and responsibilities.

NOAA’S UNIQUE AND IMPORTANT CAPABILITIES

- Nation’s leader in observing and characterizing atmospheric and ocean systems dynamics

- Weather and oceanographic hazard predictions

- Harmful algal bloom predictions

- Unparalleled marine mammal expertise

- Assessing climate effects on oceans
NOAA HAS THE MISSION

• **Legislative mandates**
  - Oceans and Human Health Act
  - Marine Mammal Protection Act/Marine Mammal Health and Stranding Response Act
  - Harmful Algal Blooms and Hypoxia Research and Control Act

• **Community drivers**
  - U.S. Ocean Action Plan
  - Ocean Research Priorities Plan and Implementation Strategy
  - IOOS/GEOSS goals
  - Mission to protect life and property
  - Seafood safety
FINDING #2: NOAA IS WELL-POSITIONED TO MEET THE NEED
• NOAA is the only agency with the capability and responsibility to ensure a holistic ocean health science and management strategy
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• NOAA has demonstrated experience partnering with other agencies that have complementary skills and responsibilities

DEMONSTRATED PARTNERSHIP SUCCESS
• NOAA has only a subset of the federal capabilities
  – NSF/NIH are partners in the Oceans and Human Health Initiative
  – USGS is the leader in coastal processes
  – EPA has toxicological and epidemiological capabilities
  – CDC has disease surveillance
• NOAA has only a subset of the client base
  – Beach health managers respond to EPA
  – FDA has primary responsibility for food safety
  – FEMA acts upon NOAA’s coastal hazards predictions
  – CDC has the pipeline to the public health community
• We interviewed leaders from these agencies
  – They all want NOAA to be a leader in this field
  – NOAA is a science agency and provides a foundation that allows other agencies to do their job well
  – Everyone was impressed by NOAA’s leadership in the Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health
FINDING #3: NOAA HAS A DIVERSE HEALTH PORTFOLIO, BUT THE PIECES NEED TO BE BETTER LINKED

• Activities are scattered across the agency

• NOAA staff found it difficult to list the agency’s health programs
  – Program list provided was focused mostly on research and OHHI
  – Failed to recognize many operational natural disaster and trauma programs

• NOAA lacks a coordinating entity responsible for linking these pieces into a comprehensive program
FINDING #4: NOAA CAN BETTER QUANTIFY AND COMMUNICATE THE BENEFITS

• NOAA does a poor job of selling its successes
  – Your budgets suffer as a result
  – Need to communicate a sense of urgency for your products
  – Demonstrate return on investment

• NOAA saves lives and preserves health
  – Screening systems for fish and shellfish contamination
  – Storm surge warning systems
  – Predictive models for search and rescue

• Need to develop performance metrics
  – Create public awareness of economic and social costs
  – Make them a focal point for how you judge agency success
RECOMMENDATIONS

• Establish health protection, preservation, and enhancement as an agency-wide goal
  – Own the role
  – Incorporate it into the Next Generation Strategic Plan

• Develop a comprehensive plan for NOAA’s health programs
  – Integrate disparate efforts into an integrated program
  – Link NOAA’s efforts to other federal agencies with complementary skills
  – Base the plan on a systematic risk characterization that quantifies potential health benefits and threats
  – Ensure investment in activities that provide the greatest societal benefit

• Focus initially on several priority projects
  – Forecasts of impending threats
  – Surveillance systems for emerging pathogens, contaminants and toxins
  – Climate change effects on health
  – Health benefits from the sea
PUBLIC COMMENTS

• Received 15 comment letters
  – 6 from NOAA organizations
  – 3 from NGOs
  – 6 from individuals (academics)

• All were complementary of our findings and recommendations
  – Most provided information to reinforce or elaborate on points we made

• Most frequent comments were to incorporate materials prepared subsequent to our drafting the report
  – Next Generation Strategic Plan
  – National Climate Service
  – National Fisheries Advisory Council recommendations
CONCLUDING REMARKS

• Thank you to the SAB for bringing together an experienced and competent team to develop advice

• The OHWG enjoyed working together to critically review NOAA’s current efforts and develop recommendations for the future

• The OHWG offers the results of these efforts to the SAB for its consideration

• Questions?