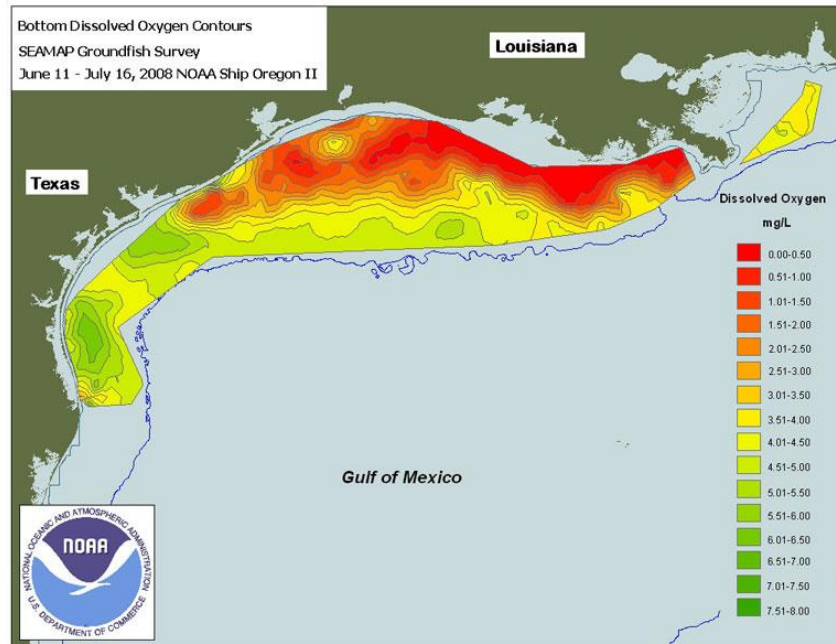# User-driven tools to predict and assess effects of reduced nutrients and hypoxia on living resources in the Gulf of Mexico

Bottom Dissolved Oxygen Contours
SEAMAP Groundfish Survey
June 11 – July 16, 2008 NOAA Ship Oregon II

Kim de Mutsert, Kristy A. Lewis, Matthew Campbell, Stephen Brandt, Arnaud Laurent, Joe Buszowski and Jeroen Steenbeek

Workshop participants

Name	Affiliation	Role
Alan Lewitus	NOAA Center for Sponsored Coastal Ocean Research	Program office
Angelina Freeman	Coastal Protection and Restoration Authority	Advisory panel
Arnaud Laurent	Dalhousie University	Project team
Brian Cameron	BOEM	Participant
Brian Dixon	ECOGIG (Ecosystem Impacts of Oil and Gas Inputs to the Gulf)	Participant
Cassandra Glaspie	Oregon State University	Project team
Cholena Ren	BOEM	Participant
Chris Kelble	NOAA	Participant
Cynthia Sellinger	Oregon State University	Co-PI
Daniel Obenour	North Carolina State University	Synergistic project PI
Dave Lindquist	Coastal Protection and Restoration Authority of Louisiana	Participant
David Hilmer	NOAA Center for Sponsored Coastal Ocean Research	Program manager
Demetri Spyropulas	Medical University of South Carolina	Participant
Doug Daigle	Louisiana Hypoxia Working Group	Participant
Dubravko Justic	Louisiana State University	Synergistic project co-PI
Haosheng Huang	Louisiana State University	Synergistic project co-PI
Idrissa Boube	BOEM	Participant
James Tolan	Texas Parks and Wildlife Department	Advisory panel
Jeff Rester	Gulf States Marine Fisheries Commission	Advisory panel
Kenny Rose	Louisiana State University	Synergistic project PI
Kim de Mutsert	George Mason University	Lead PI
Kirsten Larsen	NOAA	Participant
Mark Belter	BOEM	Participant
Mark Schexnayder	Louisiana Department of Wildlife and Fisheries	Advisory panel
Matt Campbell	NOAA Fisheries	Application PI
Melissa Baustian	Water Institute of the Gulf	Advisory panel
Pat Makoski	Calhoun County - Public Health Dept.	Participant
Ross Del Rio	BOEM	Participant
Rusty Gaude	Louisiana Sea Grant	Participant
Shannon Martin	NOAA Fisheries	Advisory panel
Steve Ashby	Northern Gulf Institute	Advisory panel
Steve Brandt	Oregon State University	Co-PI
Steve DiMarco	Texas A&M University	Participant
Thomas DeWitt	Texas A&M University	Participant

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Advisory Panel

Name	Affiliation	Email	Role
Angelina Freeman	Coastal Protection and Restoration Authority	angelina.freeman@la.gov	Advisory panel
Bonnie Ponwith	NMFS-SEFSC-Miami	bonnie.ponwith@noaa.gov	advisory panel
James Tolan	Texas Parks and Wildlife Department	James.Tolan@tpwd.texas.gov	Advisory panel
James H. Cowan	Louisiana State University	jhcowan@lsu.edu	Advisory panel
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Jeff Rester	Gulf States Marine Fisheries Commission	JRester@gsmfc.org	Advisory panel
Mandy Karnouskas	NMFS-SEFSC-Miami	mandy.karnauskas@noaa.gov	advisory panel
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Steve Ashby	Northern Gulf Institute	sashby@gri.msstate.edu	Advisory panel
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Andy Fisher ??	LDWF	afischer@wlf.la.gov	Advisory panel
James Nance	NMFS SEFSC-Galveston	james.m.nance@noaa.gov	Advisory panel
Ted Switzer	Florida Fish and Wildlife Conservation Commision	Luiz.Barbieri@myfwc.com	Advisory panel
Melissa Baustian	Water Institute of the Gulf	mbaustian@thewaterinstitute.org	Advisory panel
Mark Schexnayder	Louisiana Department of Wildlife and Fisheries	mschexnayder@wlf.la.gov	Advisory panel
Rick Hart	NMFS SEFSC-Galveston	Rick.Hart@noaa.gov	Advisory panel
Robert Twilley	Louisiana Sea Grant	rtwilley@lsu.edu	Advisory panel
Lisa Desfosse	NMFS-SEFSC-Pascagoula	Lisa.Desfosse@noaa.gov	Advisory panel

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Workshop outcomes

Model domain
- Stick to 5 km^2 grid
- Extend model area to the east to encompass ROMS domain
- Model domain will have coverage of the estuaries; we will not receive ROMS output there, but the model is then set-up for potential other model linkages that do provide output in some estuaries (e.g. FVCOM)

Workshop outcomes

Species
- List of important species mentioned by participants already covered include menhaden brown shrimp, white shrimp, red snapper, Atlantic croaker, spot, blue crab, mullets, Atlantic bumper, red drum
- Additional species to consider: sea robins, butterfish
- Perhaps leave them in the group 'small forage fish'
- Model runs on a monthly timestep, may need to consider ways to include effects of environmental drivers on a daily timestep for some 'slow' species (benthic crabs) and target species (red snapper, Atlantic croaker, shrimps, red drum).
- Aggregation of species groups can be done after the fact
- Don't run the model with functional groups instead of species, but output can be presented in terms of functional groups when appropriate.

Workshop outcomes

Connection to other models and environmental drivers
- Useful to know all of the outputs produced here relative to synergistic projects, where they overlap, and which ones can be compared and how.
- Collaboration between the synergistic projects would be fruitful
- Seek opportunities for future collaborations.
- Running the same nutrient reduction scenario in all 3 projects and compare outputs
- Bioenergetics parameters from Rose's croaker model to develop a new Atlantic Croaker production potential model
- Dissolved oxygen and possibly Chl a output from Obenour's statistical model
- Justic Drubravko FVCOM model as drivers in the Ecospace model (as an additional alternative to the ROMS model from our project)
- Agree to base years (2000 – 2016) and providing the cruise data from earlier Brandt et al. projects to the other PIs.

Workshop outcomes
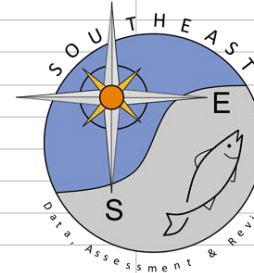
Stock assessment

- We need a product that can be incorporated into stock assessment.
- High interest to the SSC.
- IEA red tide model used in the Gulf of Mexico red grouper (SEDAR 42) effects of red tide incorporated in red grouper mortality.
- IEA presentation of annual report.
- Workshop 2 and 3 will be hands-on and will focus on the people who will use the tools we aim to develop.

Upcoming Collaborative Opportunities

Title	Assessment species	Assessment track	Terminal year	Organizing entity	Data workshop	Assessment workshop	Contact
51	Gulf of Mexico Gray Snapper	Benchmark (new data sets)	2015	SEDAR	April 24-28, 2017	February 13-15, 2018	julie.neer@safmc.net
52	Gulf of Mexico Red Snapper	Standard (update from benchmark)	2016	SEDAR	Undecided	Undecided	julie.neer@safmc.net
54	Sandbar Shark (HMS)	Standard (update from benchmark)	2015	SEDAR	May-Aug, 2017	Late 2017	julie.neer@safmc.net
	White shrimp			SEFSC Galveston			Rick.Hart@noaa.gov
	Brown shrimp			SEFSC Galveston			Rick.Hart@noaa.gov
	Pink shrimp			SEFSC Galveston			Rick.Hart@noaa.gov
	Royal Red?			SEFSC Galveston			Rick.Hart@noaa.gov
For further information on assessment scheduling etc visit:							
http://sedarweb.org/							
http://sedarweb.org/docs/page/SEDAR_PlanSchedule_Nov2016_FINAL.pdf							
http://www.galvestonlab.sefsc.noaa.gov/research/fishery_management/index.html#safe							

State of the Gulf of Mexico - One Gulf Summit from March 26-31.

AMERICAN FISHERIES SOCIETY
147TH ANNUAL MEETING
TAMPA, FLORIDA
AUGUST 20-24, 2017

24TH BIENNIAL CONFERENCE
CERF 2017
NOVEMBER 5-9, 2017 • PROVIDENCE, RI
COASTAL SCIENCE INFLECTION POINT:
CELEBRATING SUCCESSES, LEARNING FROM CHALLENGES

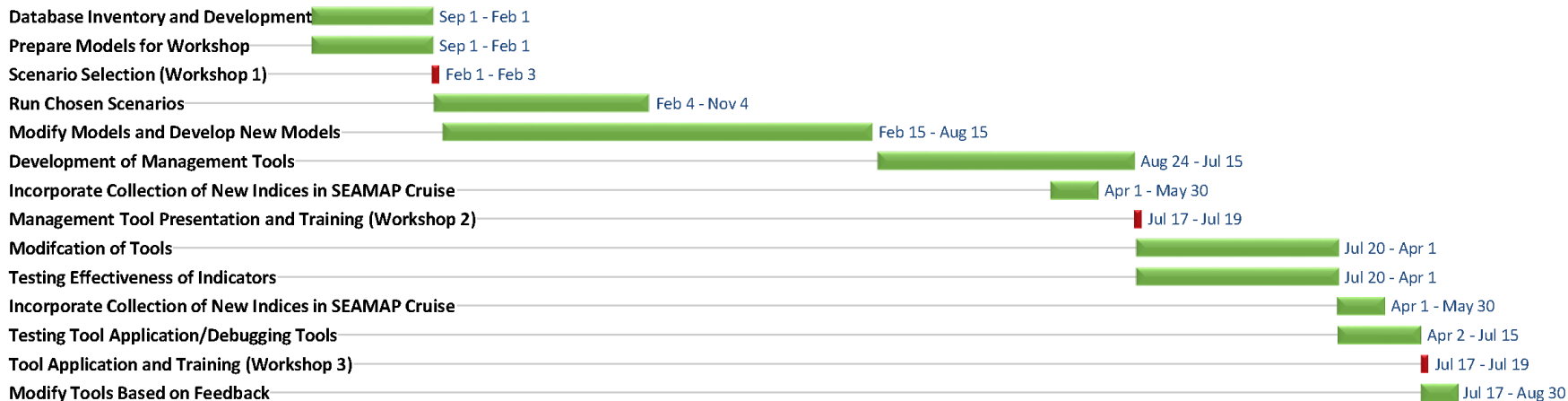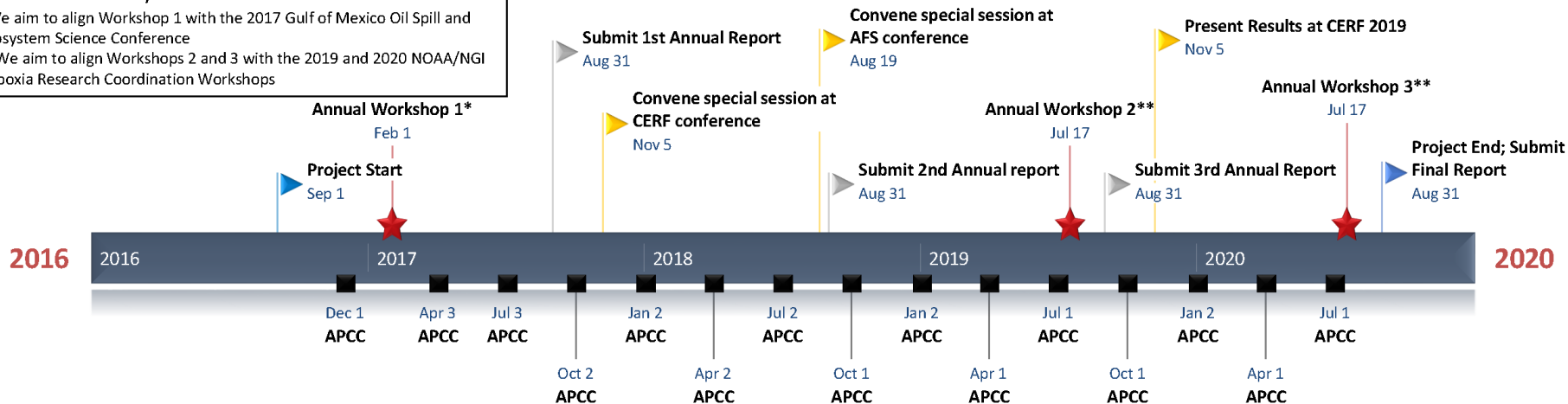https://demutsertlab.com/ngomex/

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Milestones

Milestone Chart

■ APCC: Advisory Panel Conference Call

*We aim to align Workshop 1 with the 2017 Gulf of Mexico Oil Spill and Ecosystem Science Conference
**We aim to align Workshops 2 and 3 with the 2019 and 2020 NOAA/NGI Hypoxia Research Coordination Workshops

Annual Workshop 1*
Feb 1

Project Start
Sep 1

Submit 1st Annual Report
Aug 31

Convene special session at CERF conference
Nov 5

Convene special session at AFS conference
Aug 19

Submit 2nd Annual report
Aug 31

Annual Workshop 2**
Jul 17

Present Results at CERF 2019
Nov 5

Submit 3rd Annual Report
Aug 31

Annual Workshop 3**
Jul 17

Project End; Submit Final Report
Aug 31

| 2016 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020 |

Dec 1 APCC
Apr 3 APCC
Jul 3 APCC
Jan 2 APCC
Jul 2 APCC
Jan 2 APCC
Jul 1 APCC
Jan 2 APCC
Jul 1 APCC

Oct 2 APCC
Apr 2 APCC
Oct 1 APCC
Apr 1 APCC
Oct 1 APCC
Apr 1 APCC

Task	Dates
Database Inventory and Development	Sep 1 - Feb 1
Prepare Models for Workshop	Sep 1 - Feb 1
Scenario Selection (Workshop 1)	Feb 1 - Feb 3
Run Chosen Scenarios	Feb 4 - Nov 4
Modify Models and Develop New Models	Feb 15 - Aug 15
Development of Management Tools	Aug 24 - Jul 15
Incorporate Collection of New Indices in SEAMAP Cruise	Apr 1 - May 30
Management Tool Presentation and Training (Workshop 2)	Jul 17 - Jul 19
Modifcation of Tools	Jul 20 - Apr 1
Testing Effectiveness of Indicators	Jul 20 - Apr 1
Incorporate Collection of New Indices in SEAMAP Cruise	Apr 1 - May 30
Testing Tool Application/Debugging Tools	Apr 2 - Jul 15
Tool Application and Training (Workshop 3)	Jul 17 - Jul 19
Modify Tools Based on Feedback	Jul 17 - Aug 30

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Milestones

http://www.aoml.noaa.gov/ocd/ocdweb/ESR_GOMIEA/index.html

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Thank You!