Lines of Work 2014

Science Center Assessment

Lines of Work Exercise

- Describe Center's research portfolio
  - Center-wide view
  - Show categories of research that are a priority to a Center
  - Bin the research
  - Identify the type and amount of funding that supports research portfolio
  - High organizational level assessment (not project level)
- Provide an overview of the entire ECO MA research efforts
- Provide overview of research being conducted across Centers
- Show how ECO funds support Center research categories and ECO priorities
- Show how other MA and reimbursable funds support priorities

2014 Exercise

- Retrospective vs. Forecast
- Intended as a 3-5 year assessment
- Used standardized lines of work
  - Provides some consistency
  - Allows a clearer roll-up
- Center's assessment
  - Based on 2014 allocations and reimbursable funds
  - Selected standardized lines of work
  - Defined subcategories
  - Some used multiple levels
  - Some went down to projects as a way to do assessment

Caveats

- Have not received all cyclical funds or funds from Regional Offices
- Have not received all reimbursable or even know what will be coming
- Do not know full amount of multi-year reimbursable to be spent this year
- Potential double counting of funds shared between Centers and CRUs
- Research could fit in multiple categories or overlap between categories
- Dollars may not be completely accurate

Standardized Lines of Work

- **Advanced Tools / Technology** - development and adaptation of technologies and tools that increase effectiveness, efficiency, safety, accuracy, geographic extent, or timeliness
- **Ecological Stressors** - the study of the physical, chemical, and biological factors that impact the health and integrity of ecosystems and productivity of species
- **Ecosystem Ecology** - the integrated study of biotic and abiotic components and processes of ecosystems and their interaction within an ecosystem framework
- **Landscape Science** - the holistic study of the origin, structure, and dynamics of ecosystem components across broad geographic scales
- **Restoration Science** is the research in support of the practice of ecological restoration and rehabilitation.
- **Imperiled Species** - the study of species and their habitats that are declining, rare, or uncommon
- **Invasive Species** - the study of non-indigenous species that can adversely affect the habitats they invade environmentally, ecologically, and/or economically
- **Species of Management Concern** - the study of species, subspecies, populations, or geographic segments of populations that warrant management or conservation attention, as identified by a natural resource management agency

Subcategory Examples

- Advanced Tools
  - NASA animal migration
  - Fish molecular pathology
  - SDM/Adaptive management
- Ecological Stressors
  - Energy development
  - Avian malaria & WNV
  - Deepwater Horizon oil spill
- Ecosystem Ecology
  - Deepwater ecosystems
  - Snow/glacier/climate
  - Salt marshes
- Landscape Science
  - Chesapeake Bay
  - Changing Arctic ecosystems
  - Midwestern floodplain rivers
- Restoration Science
  - Fish ecology & dam removal
  - Lower Colorado River
  - Chaparral
- Imperiled Species
  - Sage-grouse ecology
  - Wolves
  - Hawaiian forest birds
  - Desert fish ecology
- Invasive Species
  - Asian carp – molecular markers
  - Sea lamprey in Great Lakes Basin
  - Cheatgrass
- Species of Mgt Concern
  - ARMI
  - Missouri sport fishes
  - Ungulate ecology

FY2014 ECO Funding

Centers	Ecosystems Appropriated Funds						Ecosystems Funds Total
	Wildlife	Fisheries	Environments	Invasives	S&T	Cyclical	
ASC	$ 8,863,597	$ 559,243	$ 481,922		$ 343,671	$ 1,980,200	**$ 12,228,633**
CERC	$ 236,363	$ 1,114,550	$ 570,577	$ 299,610	$ 321,080	$ 1,249,770	**$ 3,791,950**
FORT	$ 1,472,406	$ 857,092	$ 2,592,532	$ 863,051	$ 1,920,621	$ 1,292,797	**$ 8,998,499**
FRESC	$ 2,138,814		$ 2,202,849	$ 374,007	$ 569,388	$ 847,970	**$ 6,133,028**
GLSC	$ 1,008	$ 3,852,237	$ 898,626	$ 378,199	$ 3,255,984	$ 212,542	**$ 8,598,596**
LSC	$ 124,514	$ 3,630,760	$ 611,898	$ 112,000		$ 1,702,835	**$ 6,182,007**
NPWRC	$ 1,665,530		$ 749,989	$ 424,330	$ 243,971	$ 682,851	**$ 3,766,671**
NOROCK	$ 1,660,000	$ 71,000	$ 1,064,000	$ 222,000	$ 75,000	$ 673,000	**$ 3,765,000**
NWHC	$ 4,895,566				$ 569,988	$ 1,580,790	**$ 7,046,344**
NWRC	$ 305,089		$ 3,666,446	$ 227,496	$ 372,160	$ 642,205	**$ 5,213,396**
PIERC	$ 331,926		$ 566,412	$ 1,516,592	$ 85,000	$ 342,537	**$ 2,842,467**
PWRC	$ 5,260,677	$ 97,922	$ 526,216		$ 5,866,735	$ 4,070,926	**$ 15,822,476**
SBSC	$ 1,156,613	$ 189,673	$ 1,247,099	$ 364,611	$ 400,633	$ 771,697	**$ 4,130,326**
SESC	$ 797,904	$ 383,037	$ 1,895,257	$ 633,037	$ 476,658	$ 3,227,991	**$ 7,413,884**
WERC	$ 3,122,452		$ 2,018,741	$ 593,516	$ 455,720	$ 1,699,400	**$ 7,889,829**
WFRC		$ 3,332,243		$ 485,275		$ 24,954	**$ 3,842,472**
UMESC	$ 885,740	$ 1,170,127	$ 590,786	$ 119,063		$ 1,906,427	**$ 4,672,143**
TOTAL	**$ 32,918,199**	**$ 15,257,884**	**$ 19,683,350**	**$ 6,612,787**	**$14,956,609**	**$ 22,908,892**	**$ 112,337,721**

* CRU data still to be added

2014 Funding Comparison

Centers	Ecosystems Funds Total	Other MA Funds	Reimbursable Funds	Total Funding
ASC	$ 12,228,633	$ 440,620	$ 1,458,487	**$ 14,127,740**
CERC	$ 3,791,950	$ 4,042,139	$ 6,227,400	**$ 14,061,489**
FORT	$ 8,998,499	$ 3,420,564	$ 6,191,825	**$ 18,610,888**
FRESC	$ 6,133,028	$ 622,022	$ 4,119,658	**$ 10,874,708**
GLSC	$ 8,598,596	$ 197,000	$ 5,709,698	**$ 14,505,294**
LSC	$ 6,182,007	$ 70,000	$ 655,706	**$ 6,907,713**
NPWRC	$ 3,766,671	$ 988,639	$ 4,045,194	**$ 8,800,504**
NOROCK	$ 3,765,000	$ 710,300	$ 1,517,000	**$ 5,992,300**
NWHC	$ 7,046,344	$ 337,552	$ 707,054	**$ 8,090,950**
NWRC	$ 5,213,396	$ 1,816,177	$ 6,225,875	**$ 13,255,448**
PIERC	$ 2,842,467	$ 233,244	$ 835,017	**$ 3,910,728**
PWRC	$ 15,822,476	$ 2,009,335	$ 1,351,414	**$ 19,183,225**
SBSC	$ 4,130,326	$ 1,130,171	$ 11,603,901	**$ 16,864,398**
SESC	$ 7,413,884	$ 763,185	$ 3,624,347	**$ 11,801,416**
WERC	$ 7,889,829	$ 1,287,352	$ 11,823,454	**$ 21,000,635**
WFRC	$ 3,842,472	$ 643,920	$ 9,528,821	**$ 14,015,213**
UMESC	$ 4,672,143	$ 333,518	$ 10,952,900	**$ 15,958,561**
TOTAL	**$ 112,337,721**	**$ 19,045,738**	**$ 86,577,751**	**$ 217,961,210**

* CRU data still to be added

Sources of Funding - 2014

Total funding: $218M

- ECO MA: $112M
- Other MA: $19M
- Reimbursable: $87M

Center support:

- ECO MA: 52% (range: 24 – 89%)
- Other MA: 9% (range: 1 – 29%)
- Reimbursable: 40% (range: 7 – 69%)

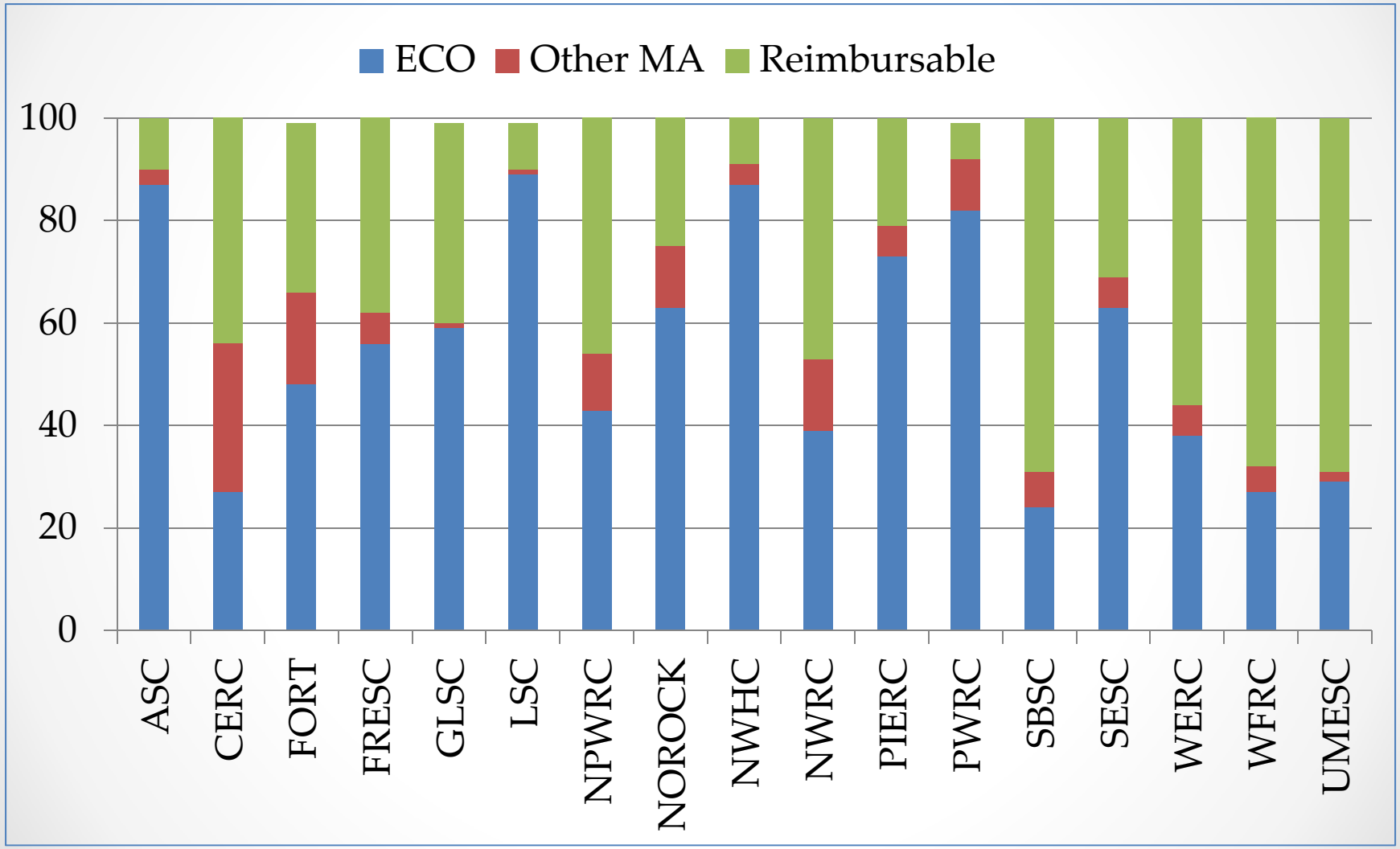
* CRU data still to be added

2013/2014 Comparison

Funding Sources	2013	2014
ECO Funds	$111.5M (53%)	$112.3M (52%)
Other MA Funds	$22.3M (11%)	$19.0M (9%)
Reimbursable Funds	$75.2M (36%)	$86.6M (40%)
TOTAL FUNDs	$209.6M	$218.0M

FY2014 Allocations to Centers: $100.2M + $16.8M (to Regions)

Sources of Funding (%)



Lines of Work

Science Centers	Advanced Tools/ Technology	Ecological Stressors	Ecosystem Ecology	Landscape Science	Restoration Science	Imperiled Species	Invasive Species	Species of Mgt Concern	**Total**
ASC	$ 857,371	$ 679,400	$ 2,030,610	$ 3,685,930		$ 3,512,274		$ 1,463,048	**$ 12,228,633**
CERC	$ 346,240	$ 265,913	$ 129,000	$ 534,831	$ 39,431	$ 1,333,935	$ 1,142,600		**$ 3,791,950**
FORT	$ 1,158,225	$ 861,375	$ 1,372,409	$ 1,194,122	$ 394,602	$ 870,028	$ 1,256,382	$ 1,891,356	**$ 8,998,499**
FRESC	$ 118,247	$ 1,190,550	$ 766,358	$ 633,583	$ 342,275	$ 1,531,800	$ 474,735	$ 1,075,480	**$ 6,133,028**
GLSC		$ 1,322,983	$ 2,742,862	$ 1,229,918	$ 2,781,993		$ 520,840		**$ 8,598,596**
LSC	$ 563,823	$ 2,391,109	$ 1,057,030	$ 303,114	$ 218,893	$ 728,820	$ 478,019	$ 441,200	**$ 6,182,008**
NPWRC	$ 645,697	$ 341,519	$ 858,127	$ 672,982	$ 280,366	$ 680,025	$ 141,555	$ 146,400	**$ 3,766,671**
NOROCK		$ 438,000	$ 353,000	$ 408,000		$ 928,000	$ 541,000	$ 1,097,000	**$ 3,765,000**
NWHC	$ 531,053	$ 5,132,987				$ 1,185,120	$ 60,000	$ 137,185	**$ 7,046,345**
NWRC	$ 840,595	$ 432,521	$ 632,218	$ 1,405,278	$ 514,848		$ 426,134	$ 961,802	**$ 5,213,396**
PIERC	$ 72,411	$ 560,412		$ 78,748	$ 334,835	$ 1,407,978	$ 388,083		**$ 2,842,467**
PWRC	$ 3,170,403	$ 888,667	$ 4,356,297	$ 699,119		$ 1,806,823	$ 186,122	$ 4,715,044	**$ 15,822,475**
SBSC		$ 186,380	$ 1,963,182	$ 843,231	$ 165,000	$ 526,587	$ 129,410	$ 316,537	**$ 4,130,327**
SESC	$ 1,273,498	$ 265,885		$ 1,820,633	$ 1,084,616	$ 1,577,224	$ 1,392,028		**$ 7,413,884**
WERC	$ 281,791	$ 2,004,940		$ 1,436,320	$ 1,469,079	$ 2,697,699			**$ 7,889,829**
WFRC		$ 1,957,781			$ 527,799	$ 645,369	$ 485,275	$ 226,248	**$ 3,842,472**
UMESC	$ 351,478	$ 240,240	$ 799,328	$ 423,146		$ 368,934	$ 1,764,087	$ 724,930	**$ 4,672,143**
TOTAL	**$ 10,210,832**	**$19,160,662**	**$ 17,060,421**	**$ 15,368,955**	**$ 8,153,737**	**$ 19,800,616**	**$ 9,386,270**	**$ 11,733,182**	**$ 112,337,723**

ECO Funding Distribution

Lines of Work

- Tools/Technology
- Ecological Stressors
- Ecosystem Ecology
- Landscape Science
- Restoration Science
- Imperiled Species
- Invasive Species
- Species of Mgt Concern

LOW – Subcategories ($000)

Imperiled Species	Wildlife	Fisheries	Environ -ments	Invasives	S&T	Cyclical	Other MA	Reimb	Total
WNS	$129					$400		$336	$865
Hoary Bat	$34		$88					$135	$257
Manatee	$431				$85			$645	$1,161
Desert Fishes		$70						$106	$176
Polar Bears	$1,282					$63	$19	$140	$1,504
Black-footed ferrets	$93					$102			$195
Freshwater Mussels		$326						$177	$503
Missouri R Terns & Plovers			$199					$2,799	$2,998

How will this be used?

- Increased knowledge of the high-level research portfolio in a Center
  - Allows for better communications about a Center's portfolio
  - Shows total funding supporting research priorities
  - Provide a glide path to new or growing priorities
  - May lead to focusing parts of a Center's research portfolio
  - Could lead to a reduction in lower priority science
- Focus on ECO goals
  - Better understanding of full ECO research portfolio and support for priority goals
  - Shows how different sources of funding are supporting ECO goals
  - Shows importance of reimbursable in supporting ECO goals
  - Increased support in Centers for priorities
- Better able to communicate accomplishments and how goals are being met
- **Still exploring how it could be used**

Questions/Comments

- What problems did you face?
- What would make this easier to do?
- Were the LOW the right categories?
- How do you see it could be used?