

OAR Comment:

Continue to implement current management changes and work out any issues associated with them. To enable OAR to see what effects there might be, provide an evaluation of their effects on personnel, scientific productivity and financial efficiency for FY 01 as compared to previous years (action: due to OAR 31 Jan 2002)

Overall laboratory changes can be broken into three major categories: 1) Structural, 2) Resource Allocation, and 3) Decision Making.

Structurally, the Laboratory is now divided into branches according to functions. Administrative, principal investigators, scientific support, field operations and outreach were grouped into their individual branches.

Scientific staff in the old structure was divided into three major divisions: The Physical Sciences Division, the Bio-geochemical Division and the Limnology Division. Staff in the first two divisions reported to a designated division head, and staff in the limnology division reported directly to the Laboratory Director. The Administration support, computer support and Marine Instrumentation staff were all assigned individual groups (figure 1).

Under the new structure, scientific staff is divided into two branches: the Science Branch (composed of Principal Investigators) and the Technical Support Branch (composed of scientific support staff, computer support, and instrumentation support) (Figure 2). The Administration, Lake Michigan Field Station, and Information Services were assigned individual branch status instead of groups.

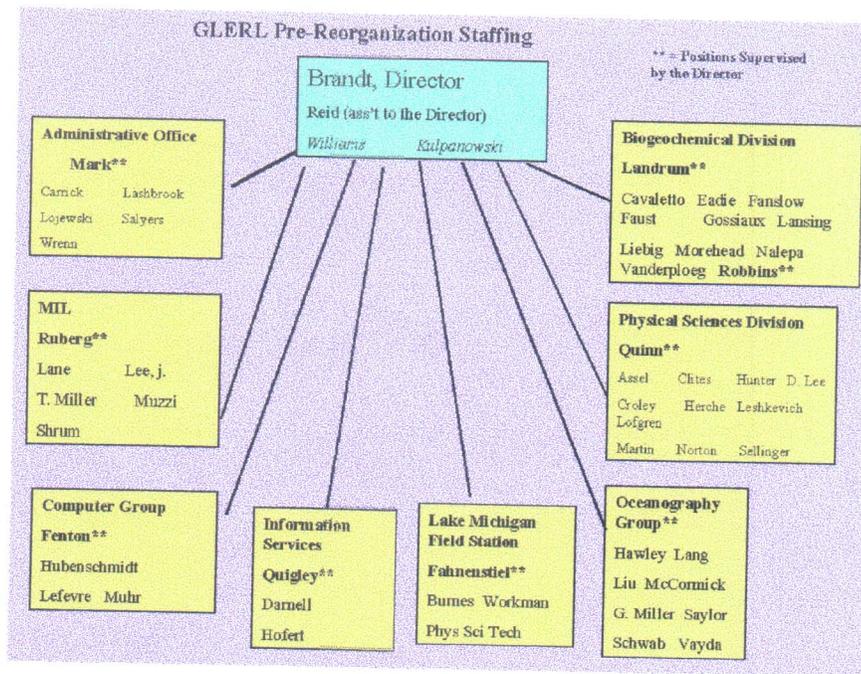


Figure 1. GLERL'S OLD STRUCTURE

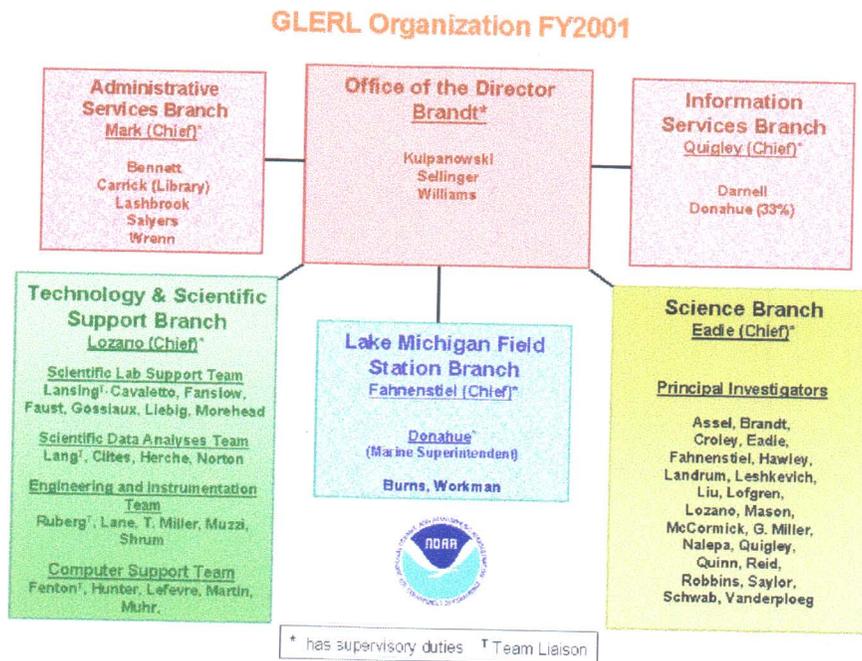


Figure 2. GLERL'S NEW STRUCTURE

Resource Allocations were changed to where scientists now compete for base funds and scientific support staff through a lab-wide proposal process.

Base funds under the old structure were given to Branch Chiefs to support their branch's programs; therefore, each individual branch would handle funding differently. Under the new structure the individual scientist is allocated base funds depending how relevant their proposed work is to GLERL's thematic areas (Figure 3).

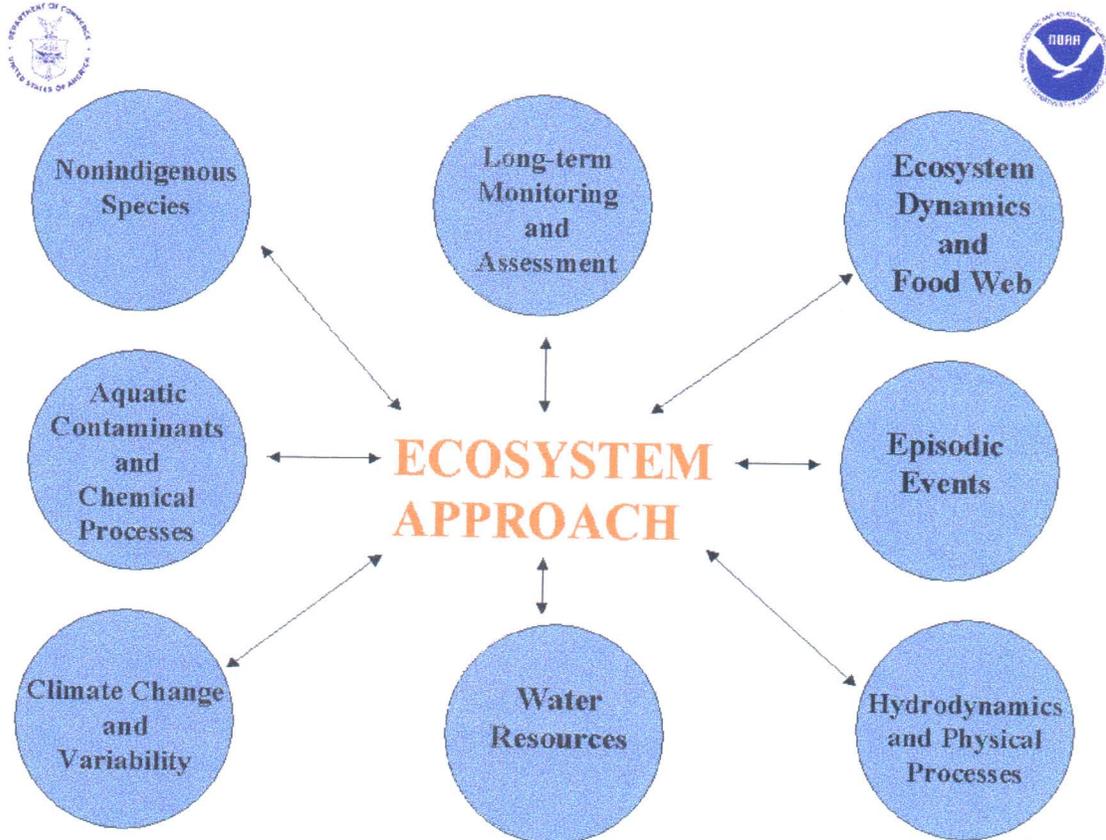


Figure 3. GLERL's Research Thematic Areas

Scientific Support under the old structure was assigned to individual P.I.s where some had support and some didn't. Under the new structure scientific support is requested during the proposal process and the P.I. receives support if his/her research proposal is accepted.

Decision-making under the old structure decisions such as staffing, resource allocations and work assignments were mostly made by upper-management and ultimately the Laboratory Director.

Under the new structure teams such as: research thematic teams, laboratory team, instrumentation team, library team, safety team, and the computer team, were formed to make suggestions to the Director on staffing, infrastructure resources, work assignments, and laboratory operations. Additionally, each individual in the laboratory has input on how GLERL achieve its strategic goals through the awards process. Therefore, under the new structure, decision-making has been relegated to the lowest level.

Through these changes actions were implemented to accomplish elements of our strategic plan.

Actions Taken:

➤ P.I. Brainstorming Session on Increased Productivity

The following are the results of the brainstorming session on how to increase the productivity of refereed journal articles. There were a total of 601 responses to this exercise. These responses were then grouped together into thirteen issues. The Issues were as follows:

- 1) Personnel—More Technical and Administrative Support
- 2) Personnel —More P.I.s & Post docs
- 3) Administrative Issues—eliminate administrative burdens
- 4) Work Environment—pleasant work environment
- 5) Training—training in scientific writing
- 6) Budget—more base funds
- 7) Equipment—continue to provide computer hardware/software support
- 8) Accountability—restrict or remove poor performers
- 9) Incentives—better offices, sabbaticals, support, etc.
- 10) Publication Issues
- 11) Sabbaticals—writing sabbaticals
- 12) Collaboration (within GLERL) —environment for informal discussions

13) Collaboration (outside GLERL)—wanted to encourage more collaboration

Below is a chart showing the distribution of responses as well as individual responses broken down.

FIGURE 4.

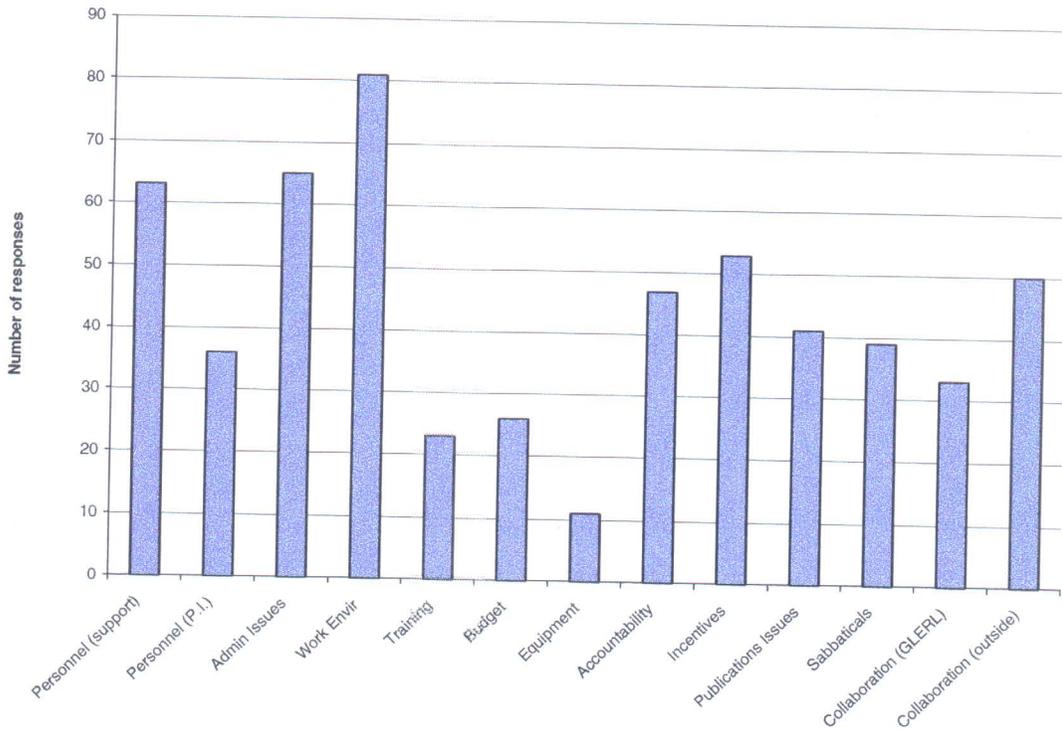


Figure 4 P.I. RESPONSES TO INCREASED PRODUCTIVITY

➤ AWARDS POLICY INITIATIVES:

The team awards policy incorporates goals and steps individuals can take to achieve these goals. Specifically, at the beginning of the 'Awardable Year' the Director sets the overall Laboratory goals based on GLERL's Strategic Plan and allows the individual branches to decide on how to achieve these goals. The following four goals were set for this calendar year:

- I. **Improve Scientific Pre-eminence**
- II. **Technology Development and Application**
- III. **Improve 'GLERL' Spirit**
- IV. **Improve Travel Efficiency**

Listed below are objectives that each individual branch identified on how to achieve these goals. Objectives that are bolded and are preceded by a check mark are completed. Objectives that are preceded by a snowflake have been started and are ongoing. And, objectives that are preceded by a period have not yet been initiated.

Branch Objectives to Meet These Goals

1) **Science Branch Goals:**

GLERL Goal 1. Improve Scientific Pre-eminence
Objectives

- ✓ **Provide leadership in the development of multi-institutional programs**
- Improve scientific exchange and new ideas
- Promote and improve Post-doc program(s)
- ✓ **Promote and improve the Seminar Program**
- ✓ **Create guidelines for an Emeritus program**
- ✓ **Create guidelines for a Distinguished Visiting Scholar program**
- ✓ **Create guidelines for a sabbatical program**
- ✓ **Support development and submissions Proposals**
- Increase internal visibility as a means of communication of ideas
 - ❖ **Mentor students, post-docs and new PIs**
 - ❖ **Publications**
 - ❖ **Promote high quality publications**
 - ❖ **Improve 3 year running average (RA) of publications**

- ❖ {RA (1991-2000) of peer-reviewed/PIFTE = 1.6 +/-0.2}
- ❖ Encourage internal and external collaborations
 - ✓ **Improve writing efficiency (e.g. bibliographic software)**
 - ❖ **Increase internal visibility as a means of communication of ideas**
- ❖ Encourage participation in professional, national, and international committees, workshops, boards, etc.
- ❖ Encourage presentations of programs to peers, users, and the public

GLERL Goal 2. Technology Development and Application

- ❖ Keep current on new technologies related to critical scientific questions
- ✓ **Encourage testing of new approaches/technologies (via collaboration, training, begging, borrowing, or leasing) related to critical scientific questions**
- ❖ Engage GLERL management to assist in acquisition of (successfully tested and evaluated) new technologies via internal, OAR, NOAA, and/or other sources of funding.
- ❖ Encourage technology transfer of GLERL products

GLERL Goal 3. Improve GLERL Spirit

- ✓ **Improve internal communication - PIs and project leaders are encouraged to brief GLERL support (MIL, Tech, Computer, Admin) and other interested PIs on new activities through 15 minute informal meetings (What, why, how, and assistance requested from support). Encourage discussions to improve programs**
- ❖ Encourage more family activities, for example inviting partners and children to a parking lot picnic, or a GLERL open house for families only.

2) Scientific Support Branch Goals:

I. Improve Scientific Pre-eminence

- *The support branch will plan and host a meeting here at GLERL to explore avenues for increasing the application of our research. Invited speakers will be representatives from agencies that are in the business of bridging the gap between scientists and policy makers such as the Great Lakes Commission, Sea Grant, etc.*
- *The branch will encourage all employees to try one email-free day per week.*
- *We will design and distribute 'quiet hours' signs for voluntary use*
- *We will initiate a meeting with the Administrative Services branch to investigate a new phone system.*
- *We plan to ask the Director to solicit new members for committees in such a way that no one person has to serve on more than one committee at a time.*

II. Technology Development and Application

- ✓ *The branch will survey the PI's to get their ideas on what tasks they would pass on to a support branch member if they could. This information will be distributed to the support branch.*
- ✓ *Support Branch will designate a person or persons willing to serve as web page 'techies'. These people will advertise their services to the PI's on a semi-regular basis.*
- ✓ *A good first step for this year (or half-year) would be to identify a few branch members to develop a data storage & access management structure and try to determine how much time this task would take. These people could determine the general components of such a system (e.g., data will be stored on storage tapes, therefore we need a tape silo) and sketch out what the next steps should be.*

III. Improve GLERL Spirit

- The Support Branch will plan and conduct one social event this year during work hours
- The branch will find a member or members to serve as 'Committee Morale Boosters' for the lab. They will investigate a periodic reward system using food or merchandise to thank committee members for their time and effort.

3) Information Services Branch:

Goal 1. Improve Scientific Pre-eminence

- ✓ In partnership with the Great Lakes Commission, the Great Lakes Fishery Commission, and the USGS Great Lakes Science Center, plan and coordinate the Great Lakes Odyssey Congressional staff tour to northern Michigan
- ✓ In partnership with the Great Lakes Sea Grant Network, recruit a GLERL-based Sea Grant Extension agent and work with the incumbent to develop close linkages between GLERL and the Great Lakes Sea Grant Network outreach and education infrastructure.
- ✓ Promote expanded dialog with policy- and decision-makers to determine if/how GLERL immediate and long-term research objectives might be adjusted to more effectively meet their needs.
- ✓ Set up and staff exhibit with available literature on GLERL research at 2001 IAGLR Conference
- ✓ Publicize GLERL products, services, and expertise among the science community through press releases and advisories, OAR "Hot Items" and other web features.
- ✓ Increase constituent awareness of GLERL scientific products, services and expertise through lab tours, media events, press releases, media advisories, web postings and emails, exhibits at public events.
- ✓ Respond promptly to constituent requests for GLERL, products, services, expertise, or data and other information on Great Lakes and coastal resources.
- ✓ Proactively seek out and contact potential new constituent groups who might benefit from use of GLERL products, services and expertise.

Goal 2. Technology Development and Application

- ✓ Apply "state-of-art" printing hardware and software to increase cost-effectiveness and output of printed

literature descriptions of GLERL science and related products, services and expertise.

- ✓ Identify, develop and implement new web-based technology to ensure timely and easy constituent access to descriptions of GLERL science and related products, services and expertise.
- ✓ Identify and apply new technology to improve constituent understanding of GLERL science and its environmental and societal benefits.
- ✓ Support, promote, and publicize the deployment and operation of shore-based GLERL met stations and web cams.

Goal 3. Improve 'GLERL' Spirit

- ✓ Publicize GLERL research products, services, expertise, and accomplishments within GLERL, OAR and NOAA through the use of OAR "Hot Items" postings
- ✓ Publicize GLERL staff accomplishments, awards and similar recognition among the scientific community, state, federal, provincial and international agencies, and local, regional, and national media

4) Administrative Team Goals:

I Improve Scientific Pre-Eminence

- Admin support person will be available attend branch meetings to better understand their needs.
- ✓ **Reduce interruption and prevent unauthorized spending by establishing signature authority for project spending.**
- ✓ **Reconcile Visas for staff that wants us to.**

II. Technology Development and Application

- Develop list of frequently ordered supplies.
- Establish regularly scheduled supply order date.
- Distribute timesheets electronically for those who want them electronically
- ✓ Reduce # of forms

III Improve GLERL Spirit

- Sponsor one "All Hands" event this year.
- ✓ **Improve ambience of lunchroom and front reception area.**

IV Improve Travel Efficiency

- Prepare blanket travel orders for anyone who has a field program.
- ❖ Insure timely submission of travel vouchers to CASC.
- Implement additional tracking of travel to assess status of unvouched trips.
- ✓ **Frequent updates of travel ceilings to meet travel cap.**
- Implement use of Citrix to track status of vouchers.
- ✓ **Travel authorizations and vouchers signed by Administrative Officer.**
- Add project # to ship calendar to improve efficiency in preparation of vouchers.

Quantative and Qualitative Results

I. Effects on Personnel

- 1) Under the old structure project money were given to the division heads for them to distribute on projects of their choice. Under the present structure there is one pot of research money that each Principal Investigator can compete for during the proposal process—the P.I.s are generally happier with this structure.
- 2) The present structure allows opportunities for support scientists to expand their careers. Several have responded to these opportunities:
 - a) A support staff member requested and received training in WEB technologies—which has since became part of her duties.
 - b) Support staff are not assigned to one P.I., they are assigned several projects through the proposal process thus expanding their career opportunities.
- 3) Under the old structure, administrative duties were scattered throughout the laboratory with secretaries doing overlapping duties. Under the new structure, all of the administrative personnel are in one branch and duties are clearly defined with no overlap. This structure has increased efficiency of the Administrative Team.
- 4) The Support Teams have taken on responsibility for maintaining lab equipment, clean up things, replacing critical functions of people leaving—not autocratic
- 5) Tech support teams are younger than P.I.s and are therefore outlast the P.I.s—the new structure allows the P.I.s to get together with the support person and decide on their future when a P.I. leaves.
- 6) One of the goals was to improve GLERL spirit. Everyone in the lab set out to achieve that goal. Because of this there were more official social get-togethers (picnics, happy hours, card tournaments, basketball, and aerobic activities) as well as other activities identified by the individual teams. These events were well attended.

II. Effects on Scientific Productivity

- 1) Awards system has engaged the entire laboratory in achieving the overall goals
- 2) Administrative Team has step up to find the potential funding agencies and create a boilerplate for proposal submission—lessening the administrative load.
- 3) Hiring a budget analysis has greatly made the outside proposal process easy.

One measure of scientific productivity is publications. Figure 2 shows both the number of refereed publications produced per year since 1996 as well as the FTE ceiling. It is significant to note that although FTE's have decreased since 1996, publications have increased.

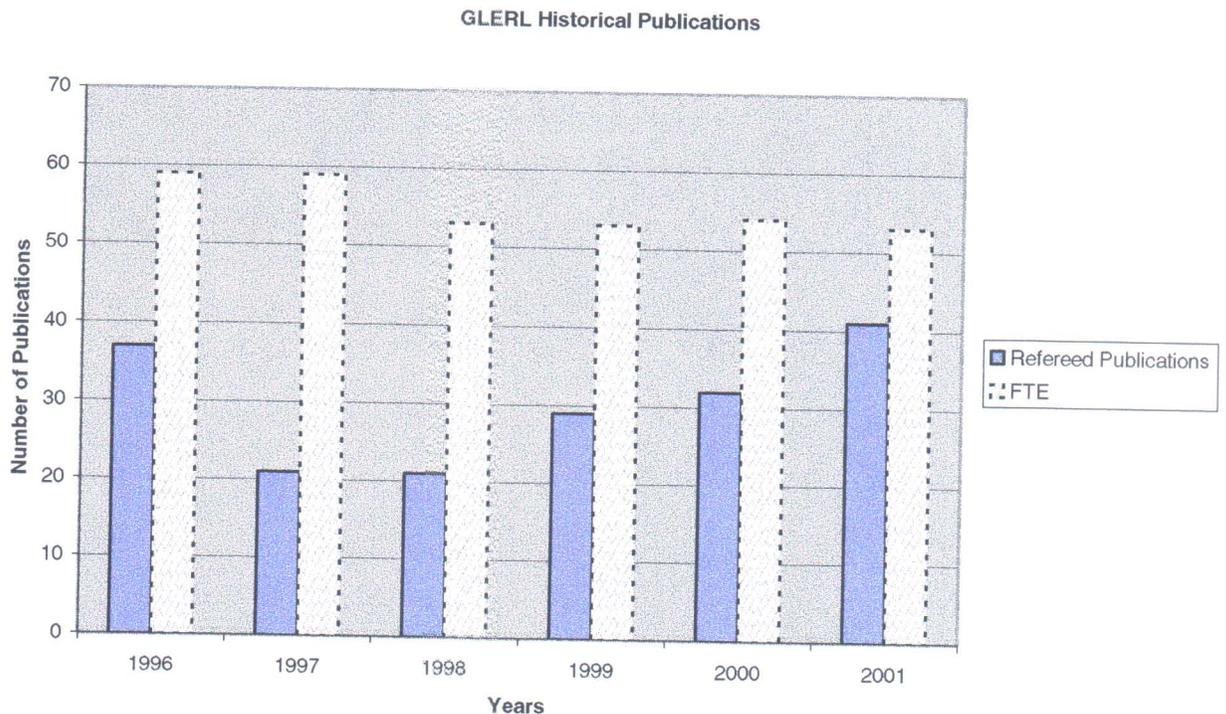


Figure 5 REFEREED PUBLICATIONS

4) Effects on Financial Efficiency

Over the years we have gotten less funding, but were able to conduct a high level of research through the new structure. The proposal process aimed funds directly towards the most productive and most critical areas of science.

As shown in Figure 3, GLERL's Historical Spending Profile, the amount of money used for research has decreased, while fixed costs such as rent and utilities have increased.

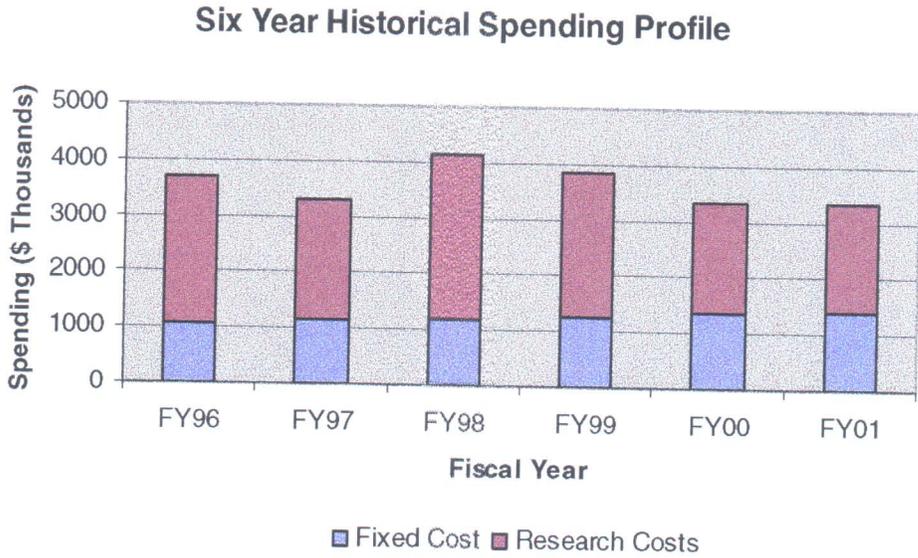


Figure 6 Six year historical Spending Profile

Additionally, GLERL's budget as shown in deflated dollars (Table 1, column 4) has remained virtually the same since 1990. Given the increase in all the before mentioned variables, dollars to conduct a successful research program has shrunk considerably.

Fiscal Year	Congressional Base (\$millions)	Actual NOAA Allocation	Deflated to 1990 Dollars	FTE
1990	4.772	4.972	4.972	76
1991	4.772	5.026	4.823	75
1992	4.748	6.079 ¹	5.663	75
1993	4.558	6.154 ¹	5.566	72
1994	4.560	6.614 ¹	5.833	66
1995	4.560	6.482 ¹	5.559	62
1996	5.200 ²	5.883	4.901	59
1997	5.200	5.710	4.650	59
1998	6.000	6.395	5.128	53
1999	6.825	6.395	5.017	53
2000	6.825	6.348	4.818	54
2001	7.000	6.807 ³	4.989	54

Financial efficiency was also achieved by the two following actions:

- 1) Hiring of a Joint Position scientists, where GLERL pays half the salary. This allows not only partnering but fiscal efficiency.
- 2) Better budgeting process and support to the P.I.s in developing external proposals—fair number of proposals funded—widely distributed funded—more investigator driven proposals.

Effects of New Structure:

Financial efficiency, productivity and morale have improved greatly under the new laboratory structure. Once the Director sets goals for the laboratory, every individual in the laboratory has a part in achieving those goals. Under the lab structure, the Laboratory showed high productivity with less resources. Additionally, by bringing decision making to the lowest possible level has increased morale.