

April 17, 1991

Dr. Jerry Franklin  
College of Forest Resources, AR-10  
University of Washington  
Seattle, WA 98195

Dear Jerry:

As a member of the NASA Earth Observing System MODIS Team, I have been authorized to initiate discussions with NSF on the possible future designation of the LTER as EOS land monitoring sites. I have already discussed this with Tom Callahan and Jim Schindler, along with some individuals at LTERs, and no one has been negative yet.

Briefly the situation is this. In 1997-98 NASA will launch the Earth Observing System, and begin generating the most advanced remote sensing products ever routinely produced. As usual with NASA, "ground truth" of these variety of remote sensing products has been low on the priority list, and NASA does not have either the personnel, or established sites to do a very good job anyway. It has occurred to me that at least some of the LTERs would be perfect for this task.

My wish list for data from land monitoring sites would include for example, the following:

- 1) land cover map
- 2) leaf area index map, possibly done seasonally
- 3) net primary production and standing biomass
- 4) daily standard meteorological data
- 5) seasonal snow cover and snowmelt
- 6) soil moisture depletion
- 7) hydrologic discharge from gauged watersheds

While there are many questions about accuracies, spatial and temporal resolution etc, this list has alot in common with existing LTER databases. Land scientists in the NASA EOS, including myself, will need these types of data regularly across a range of sites.

So what's in it for the LTER's? They don't want to just be the drone brigade for NASA. I envision that in exchange for a coordinated regular ground dataset from LTERs that were willing to participate, that NASA would provide all useful remote sensing products generated, and well before their availability to the general scientific public. These may include:

- 1) satellite derived regional landcover maps defining biome coverages and facilitating a quantitative change detection program.
- 2) regional maps of seasonally dynamic LAI, NPP by biome type.

3) regional databases of daily surface meteorology, cloudcover and aerosol corrections, temperature anomalies, surface wetness, surface resistance etc.

4) higher spectral resolution data being researched for estimation of various nutrient cycling variables.

5) regional maps of a variety of ecosystem processes ( such as photosynthesis or decomposition) in conjunction with our integrated remote sensing-ecosystem modeling projects.

6) near real-time fire maps

Ideally joint research projects would be developed, so that these interchanges would become active science activities for the LTERs, not merely data collection exercises.

Because we really do not need this interchange to be in place before around 1995, we have alot of time to discuss, modify and implement a plan like this. At this point I would like first, as Chair of the LTER Network Committee, your personal opinion, and second, the collective opinion of the Network Committee as to interest in further pursuit of this idea. Also feel free to discuss this with anyone else interested, there are no secret deals going on here. If everyone is interested in principle, and wants more details, I would then be willing to come to a meeting, present in a more formal way the idea, and begin evolving a specific plan. NASA Headquarters, and specifically Dr. Diane Wickland, is interested in this idea, but encouraged me to first develop it at the scientist level, before getting bureaucratic protocol involved. That's why you are hearing this from me, not someone important.

I am reachable the following ways:

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Let me know what you think.

Sincerely,

Steven W. Running  
Professor

cc. D.Wickland NASA  
T. Callahan NSF



## Long Term Ecological Research Network

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University of Washington  
Seattle, WA 98195

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May 21, 1991

Dr. Steven W. Running  
University of Montana School of Forestry  
Montana Forest and Conservation Experimental Station  
Missoula, Montana 59812-1063

Dear Steve,

I was interested in your suggestions for EOS interactions between NASA and LTER which was in a recent letter to Jerry Franklin. Dianne Wickland and I have discussed potential NASA/LTER interactions at LTER Executive Committee meetings and at our "All Scientists" meeting held last September. I know we are on common ground in the realization of the difficulties in this type of work. There are significant "costs" (not necessarily monetary) involved, from both "sides", for collaborative research like this that aren't always appreciated until attempted first-hand. Perhaps definition of some standard data requirements such as you suggested is a good start.

There is already interest in such interactions within LTER. In fact direct and indirect links already exist in a number of places: Tom Gower, Tom Lillesand, Carol Wessman, Janet Franklin, John Aber, John Briggs, and Fred Sklar, not to mention the "crew" at Fairbanks.

Dr. Wickland and I can talk all we want about future research, but what is needed is some specific activity to initiate the interaction. I think your suggestions are excellent to get some joint research projects started. A presentation to the LTER Coordinating Committee about future interactions would be a good place to start. However, the last meeting was just held in April with the next scheduled for February of next year. Another route would be to form a small NASA/LTER committee or have a clearly focused workshop to produce a report outlining potential interactions and what would need to be in place for the research. As much as I hate suggesting this approach, having something on paper, especially a consensus of interested researchers, seems to ease the bureaucratic hurdles that seem to be inevitable.

Sincerely,



John Vande Castle  
LTER Network Manager

xc: Jerry Franklin



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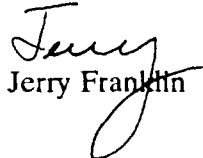
Dr. Steven W. Running  
University of Montana School of Forestry  
Montana Forest and Conservation Experimental Station  
Missoula, Montana 59812-1063

Dear Steve,

Thank you for your letter of April 17. Your suggestions for interactions with the LTER Network are right on target. Discussions for EOS interactions you described have already taken place in one form or another at meetings within LTER. As Chair of the LTER Network I fully support initiation of joint projects to further the science of both LTER and the EOS program. NSF has already provided initial, and significant funding for Network-wide GIS and remote sensing capabilities. The networked infrastructure for communication and data sharing in support of such collaborative research is already in place, and evolving within LTER.

I know you are somewhat familiar with LTER activities by your interactions with LTER scientists but would be happy to provide further information through the Network Office. In addition, I will have John Vande Castle contact you since he is involved in support of such Network-wide activities. I am interested to initiate any interaction you feel is helpful. Our next full Coordinating Committee is not until February, 1992 in Wisconsin, but I am open to any interaction prior to this.

Sincerely,

  
Jerry Franklin