



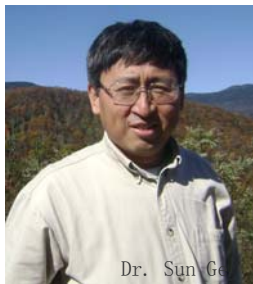
2010
Happy New Year
新年快乐



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NEWSLETTER

31 December 2009



Dr. Sun Ge

President's Corner

Dear Sino-Eco Members and Friends,

As we are celebrating the holiday season, on behalf of the executive team, I wish you and families have a safe and joyful holiday. This is a good time of reflecting our achievements and planning for the future.

We are living in a rapid changing world. I can think of a few historical events that happened this past year – from the inauguration of U.S. President of Obama to the discovery of water on the Moon, from the grand 60th anniversary celebration of the People's Republic of China to the finding of the 'Missing Link' fossil. Yes, now CO₂ is a pollutant as defined by US EPA.

However, for ecologists, nothing was more concerned than the UN December Climate Change Conference in Copenhagen. The clashes between developed and developing countries on who to be blamed and who should take the responsibilities to curb global warming only reflect the challenges ahead of humankind on Earth. As a forester myself, I was certainly excited to hear that forestry is part of the solutions to offset carbon emissions that China and the U.S. are contributing most. I thought that the year 2009 might be a turning point about climate change issues: it is not about IF climate is changing, it is about HOW we will do about it. Ecologists have a big role to respond to climate change science discoveries - to understand ecosystem processes and functions and design adaptation measures to confront with a changing environment. In fact, the 2010 Annual Ecological Society of America meeting will focus on "*Global Warming: The legacy of our past, the challenge for our future*". I expect many of members will attend this important meeting in August 1-6, Pittsburgh, Pennsylvania.

During 2009, Sino-Eco organized several important workshops to celebrate the 20th anniversary. These include 'the First Young Ecologist's Forum' held together with the 'International Symposium on Modern Ecology Series (ISOMES V)' in June in Lanzhou and the workshop on 'Ecological Vision: Challenges, Responses, and Strategies', held in July in Shenyang. Both events were well received by young ecologists and students in China and clearly demonstrated how Sino-Eco could make a big difference in promoting education opportunities.

During 2009, Sino-Eco also co-sponsored a few other conferences in China (*Wuhan International Conference on the Environment*) and in the U.S. (*the 2nd International Conference on Forest and Water, Sep 14-16, Raleigh, NC*) that clearly presented Sin-Eco as an influential academic and resourceful organization. Indeed, Sino-Eco has become one of the outstanding academic organizations from overseas. I am pleased to announce that our paid membership has exceeded the 100 mark in 2009. We have all reasons to be proud of we have achieved so far during the past 20 years. I am looking forward to more exciting activities and interactions among our members in the future.

Once again, thank you for your support and have a wonderful Christmas holiday season and a prosperous New Year!

Ge Sun

President of Sino-Eco

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抓住机遇，迎接挑战，重点投资生态基础设施建设

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(Submitted in early 2009)

引言

经过30年令世界瞩目的高速经济增长, 我们付出的同样是触目惊心的生态环境代价! 掠夺式开发自然资源换取经济增长的发展模式对生态环境的破坏远远超出想象, 其行为惯性也使民众的环境维护责任感丧失殆尽, 在这种情况下, 若想从内部进行变革, 实现发展模式的升级可谓阻力重重, 短时间难以见效。本次世界金融危机使是全球经济增长放缓, 从外部为我国实现经济转型、修复已经破坏了的生态系统提供了难得的契机。如果现在不抓住机会, 当其他国家经济又开始起飞之后, 中国几近枯竭的环境资源和薄弱的生态基础设施将使下一轮的经济失去基础与动力。而抓住这一时机重点投资生态基础设施建设, 不仅可以整治环境, 而且可以以此为平台, 开拓拉动内需的劳动力市场, 解决因外部需求减少而导致的农民工失业问题, 也有助于社会的安定团结。同时为经济结构的调整赢得时间和空间。此外, 通过大量农民参与的生态环境治理, 可以提高全民的生态环境意识, 真正实现国家发展的生态精神文明。因此, 国家应从4万亿经济刺激预算中拿出相当比例的资金重点投资生态基础设施建设, 既可解决民生问题, 又为可持续发展奠定坚实的物质基础和精神基础, 可谓一举多得。在具体实施过程中应侧重流域生态修复, 同时解决水污染、水资源的问题。

1 中国的经济社会环境问题现状分析

近年来, 中国在经济发展方面取得巨大成就的同时, 在生态环境建设方面也做了很多的工作: 全年完成造林面积477万公顷, 其中人工造林329万公顷。林业重点工程完成造林面积312万公顷, 占全部造林面积的65.4%。全民义务植树23.1亿株。截至2008年底, 自然保护区达到2538个, 其中国家级自然保护区303个。新增综合治理水土流失面积4.7万平方公里, 新增实施水土流失地区封育保护面积2.6万平方公里。万元国内生产总值用水量231.8立方米, 比上年下降7.9%。万元工业增加值用水量130.3立方米, 下降7.0%。年末城市污水处理厂日处理能力达8295万立方米, 比上年末增长16.1%; 城市污水处理率达到65.3%, 提高2.4个百分点; 集中供热面积32.1亿平方米, 增长6.6%; 建成区绿地率达到31.6%, 提高0.3个百分点[1]。然而仍存在许多问题制约着中国的可持续发展, 主要体现在以下几个方面。

1.1 经济环境现状

中国的经济对外贸易出口依存度很大, 劳动密集型产品出口吸纳了数以千万计的劳动力, 其生产厂商却普遍规模较小, 抗风险能力较弱[2]。受国际金融危机、产品成本激增、外部需求减弱、人民币升值等因素影响, 今年以来我国纺织、服装等劳动密集型行业出口增速明显放缓, 长三角、珠三角地区不少中小企业面临停产甚至倒闭的困境。

另一方面, 由于实行长期的以GDP为核心的官员政绩考核指标体系, 各级官员追求经济高速增长, 政府权力的运作就偏离了常态政府的合理职能, 从而导致经济活动中政府权力与民众权利的制度性失衡。政府也系统地采取“亲商”政策, 在企业与消费者、投资-经营者与劳工的关系中, 本能地倾向于前者。政府为了经济增长, 也可以牺牲民众福利, 牺牲生态。

由于在政府权力与民众权利失衡、在不同人的权利不能得到平等保障的制度环境下所出现的繁荣, 必然呈现为财富分配的不公平。经济繁荣的过程也正是部分民众不满和怨恨积累的过程。一旦繁荣结束, 这些怨恨就会以某种破坏性方式宣泄出来。这也正是中国经济减速的真正风险所在[3]。

1.2 生态环境现状

我国是世界上受荒漠化危害最严重的国家之一, 全国共有8大沙漠, 4大沙地, 南方沿江、沿河、沿海也有零星沙地分布。全国有2亿亩农田和15亿亩草场受到风沙危害; 沙区铁路有42%受到风沙威胁; 60%以上的贫困县集中在风沙地区。由于乱采滥挖、乱砍滥伐、滥用水源等人为破坏, 我国土地荒漠化仍呈不断扩展之势。目前全国水土流失总面积达到356万公顷, 约占国土面积的1/3。每年流失土壤养分相当于4000万吨吨标准化肥。每年新增水土流失面积1万公顷, 流失土壤达50亿吨。天然湖泊已从历史上的2800个减少到1800多个, 总面积减少36%。全国34个省市自治区, 无一没有外来种。甚至在自然保护区中, 都能或多或少地找到外来杂草。从森林、农区、水域、湿地、草地、城市居民区等处都可见到入侵物种。其中以水生生态系统的情况最为严重[4]。

环境污染治理中“边治理边破坏”、“点上治理面上破坏”、“治理赶不上破坏”的现象仍很突出。

据国家环保总局《中国环境状况公报2004》公布的数字, 七大水系劣V类水所占比例为27.9%, 比2003年下降了1.8个百分点, 但这并不意味着水污染得到了有效控制, 七大水系I-V类水质类别比例分别为4.6%, 20.9%, 16.3%, 21.6%, 8.7%。水资源匮乏的北方河流比水资源丰富的南方河流污染严重, 七大水系按水污染严重程度排序, 劣V类水质比例最高者为海河的56.7%, 其后是辽河的37.9%、淮河的32.6%、黄河的29.5%、松花江的24.4%、长江的9.6%和珠江的6.1%[5]。

1.3 社会环境现状

随着我国城市化和工业化进程的加快, 农村集体土地被大量征用, 失地农民作为农民中的一个特殊群体, 数量迅速扩大。据预测, 2020年我国失地农民总数将超过1亿[6]。这部分富余劳动力已经并将持续地对城市的社会环境产生冲击, 其中不少人的工作生活环境恶劣[7], 更谈不上承担社会责任。

同时, 许多企业缺乏社会责任感, 在经济利益至上的观念指引下, 以及视企业责任为无物的普遍社会氛围的熏陶下, 企业非法排污事件时有发生[8]。而一些城市管理者为保证所辖区域内的经济平稳运行, 对污染企业的监管与调控缺乏强有力的举措[9]。

2 中国环境问题根源解析

中国目前所面临的环境问题是众多历史、社会、经济因素长时间综合作用的结果, 但其根本还是人的问题。这些问题不是某个人或某类人单独行为的结果, 也不可能由某一部门或使用某一技术就能解决得了的。如果这个系统中的企业主、管理者、公民等各个层面的人都能以科学的、系统的发展观认识、看待所面临的这些问题, 都能本着可持续发展城市系统所需要的行为规范承担起自己所应承担的责任, 这些问题是可以解决的。

从热力学第二定律的角度看我国环境系统目前所处的状态, 其熵值(混乱度)已经较大, 环境承载力已经达到极限, 若想使该系统可持续运转下去, 必须引入信息能量, 规范各组成单元的秩序, 形成动态稳定的耗散结构, 才能缓解城市化进程过快所带来的环境压力。

3 中国的可持续发展之路

中国的可持续发展需要国家在政治、经济方面加大支持力度, 各地政府领导坚定信心, 各职能部门工作人员恪尽职守, 企业管理者和广大公民积极配合, 这样才能最优地利用投入, 建立起并维护好最优的城市系统。

3.1 组织管理与原则方面的建议

中国的环境污染控制与城市的可持续发展是一项涉及因素众多、结构与过程极为复杂的系统工程, 必须针对所要解决的问题和所要实现的目标, 引入科学的设计、运作与管理的方式。

3.1.1 项目组织与管理的团队

首先应根据系统工程的组织原则组建起一支组织结构合理的项目管理咨询(指挥)团队, 人员组成除政府主管领导之外, 还应包括:

- (1) 系统工程技术人员---负责该团队的组织结构及组织原则的设计、人员关系的协调、工作步骤的安排等;
- (2) 社会心理学家-----为各项规定出台后的社会反应作出预测, 并提供相关的解决方案;

- (3) 经济学家---对各阶段各项项目的投资费用进行预算, 在开始阶段应首先与相关专业技术一起进行管理、治理的成本核算, 鼓励、引导成本的核算, 以及短期投入与长期产出的效益分析;
- (4) 城市环境生态规划设计师---对城市各功能区、功能单位的布局提出设计方案与建议;
- (5) 污染控制工程师---对城市污染的控制提出设计方案与建议;
- (6) 市政工程师---对城市规划设计方案及污染控制方案的可行性提出意见, 并提供相应的成本预算以及实施的具体技术方案;
- (7) 广告设计编导人员---与社会心理学家一起, 将项目实施的、预期效果等编制成形象生动易懂, 并具震撼性的视觉公益广告作品;
- (8) 宣传管理部门人员---与社会心理学家及广告设计编导人员一起, 对所制作的公益广告的公众传播途径与方式提出具体的操作意见;
- (9) 教育局领导---根据社会心理学家提出的意见与方案, 制定出对在校学生进行宣传教育与方法培训的具体实施方案, 以充分发挥在校学生这一具有特殊影响力的群体在推动城市污染控制与可持续发展相关政策方面的作用。
- (10) 其他相关专业人员---项目设计与实施过程中所需要的相关领域的专家与技术人员。

3.1.2 项目开展的指导方针

(1) 科学规划

整个方案从设计、制定、检验、修正到实施一定要依据科学的系统工程工作程序进行, 人员的选配及使用也要采用当前国际上先进的人力资源管理方法, 尽可能杜绝由于个人能力的局限性而导致的决策失误。

(2) 开源节流

污染控制与可持续发展方案的实施必然会涉及传统重污染产业的推出与工艺的调整, 而这一过程中, 当地经济、社会的稳定也是必不可少的。因此, 政府主管部门和项目管理团队要承担起帮助解决这些企业进行产业升级及工艺调整过程中所涉及的技术咨询、资金支持等单靠企业自身难以顺利实现的问题, 使污染控制的这一关键环节得以顺利实施。

(3) 法大于情

科学地制定各项规章制度, 一旦订立就严格执行。此为相关各项方案能否顺利实施, 乃至全局目标能否实现的关键。基于此, 管理团队与政府主管部门的职能一定要明晰透明, 规章制度尽可能地周密健全, 补救措施的考虑要到位。

(4) 发动群众

广大群众既是污染物的制造源, 也是污染的最直接受害群体。他们的行为规范对污染控制和可持续发展方案的有效实施起着至关重要的作用。提高该群体的生态环保意识, 组建起群众监管、举报、奖惩制度, 充分发挥人民群众的力量, 是各项方案能否持续实施的重要保证。

3.2 几项具体建议

(1) 将流域的生态系统修复纳入国家4万亿元经济刺激方案中

流域生态系统修复一方面需要大量的资金投入, 另一方面, 其收益是长期的, 而非大多企业所追求的短期效益, 因此政府投资是其最重要的资金来源。目前, 中国正在推出4万亿元经济刺激计划, 而流域生态系统修复是目前国家基础建设的主要组成成分, 是这次投资的最佳方向, 其收益将巨大的, 且是多方面的。比如, 为密西西比河流域生态系统修复, 美国国会通过密西西比河上游流域生态系统修复180亿美元的预算, 并通过为密西西比河出海口沼泽生态系统修复的24亿美元和佛罗里达艾维格莱湿地生态系统修复的78亿美元的预算。这些巨额预算比起由于密西西比河流域生态系统管理的各种失误和干扰, 而导致Katrina造成纽奥尔兰高达1400亿美元损失要少得多(USDC 2005)。

(2) 将流域生态系统修复纳入国家创造就业的经济刺激方案中

在此次世界经济危机中, 以外向型经济为主的主体结构正在受到强烈的冲击, 失业率急剧上升已然成为该地区的一个严峻的社会问题, 大批农民工的返乡还会影响到全国范围内的社会安定。由于生态系统修复工程多属于劳动密集型项目, 可以消纳大量的剩余劳动力, 因此, 将各大流域生态系统修复纳入国家创造就业的经济刺激方案中, 是降低该地区失业率的一个最直接有效的手段。

(3) 经济引导与严格执法协同作用

利用本次世界性金融经济危机对一些重污染企业的影响, 在产业政策方面再采取一定的倾斜, 使这些企业自动退出或主动谋求升级。管理团队可请相关专业的专家对是否能够进行工艺升级进行评估, 无法升级的则依法坚决促使其自动退出。

(4) 在产业格局重新洗牌前提下的重新规划

本次世界经济危机为广州产业格局的转变提供了外部影响因素, 也为曾经阻力重重、来自内部的推动带来了一个减轻社会压力的契机。政府领导可召集项目管理咨询团队对此进行系统分析, 并在所得结果的基础上高瞻远瞩、洞察先机, 对城市系统进行以经济发展、环境质量、社会效益为目标的多目标规划, 并可核算出整个项目所需的资金量, 为进一步决策提供依据。

(5) 加强宣传攻势, 实现观念的转变

到位的宣传可以产生巨大的影响, 转变民众的传统观念。宣传途径可大致分为两条, 一条是面对全体公民, 通过电视、广播、街头广告等媒体形式, 将含有项目实施与否的巨大差别展示给市民, 以争取民心, 营造污染可耻的城市文化氛围。另一条是加大对在校学生的环保教育与培训力度, 充分发挥其对整个家庭的影响作用, 使其成为推动提高全民环保意识的生力军。

(6) 借鉴国外经验, 实行垃圾分类

可借鉴德国绿点计划, 实行双轨制回收系统(DSD)。它接受企业的委托, 组织收运者对他们的包装废弃物进行回收和分类, 然后送至相应的资源再利用厂家进行循环利用, 能直接回用的包装废弃物则送返制造商, 可大大地促进包装废弃物的回收利用。另外还可借鉴巴西库里蒂巴市的经验, 实行分类垃圾换食品、文具或玩具等项目, 实现垃圾分类回收。

(7) 整编城市拾荒者, 实现垃圾分类收集

每个城市都有许多从事废品收购的拾荒者, 这一群体一直以营利为目的各自为战。政府主管部门可以给这一群体一些照顾与限制, 作为交换, 要求他们不仅回收利润高的废品, 同时承担起垃圾分类收集的任务。

(8) 利用群众的力量遏制利益获得者的非法排放

建立群众监管、举报、奖惩制度, 对排污者依情节轻重及违规次数进行不同程度惩罚及曝光, 在增加其违规经济成本的同时增加其家庭的心理压力。

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中国北方干旱地区大规模造林将加剧地区性干旱

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中国过去二十年中进行了大规模的植树造林活动, 使林地面积和森林生态系统的生产力极大地提高。当前, “植树造林, 绿化祖国”以及重视生态平衡的观念已经深入人心。中国当前拥有世界上最多的人工林, 面积已达3379万公顷, 占全国森林总面积的31.86%, 占世界人工林总面积的1/3。许多研究表明中国的植物植被状况趋于向良性方向发展, 表现为森林生态系统的初级生产量的逐年提高, 大范围水土流失得到控制, 80年代前中国丘陵区严重的土壤侵蚀和环境退化得到了缓减。林地蓄积量的提高也带来了中国陆地碳蓄积量的提高, 从而使中国的陆地生态系统成为一个巨大的碳汇, 这对减缓全球气候变化、抵消二氧化碳排放是一个积极的贡献。1998年, 中央政府发起实施了“天然林保护工程”, 禁止大的河流源头所有的砍伐活动, 对当地农户实行退耕还林给与补贴。中国这一大规模的造林工程(退耕还林工程)计划在未来的10年内使其林地面积增加440,000 km²或其国土面积的5%。



可能成活, 但可能成为”小老头树”--树龄很大, 但又低又矮。

但是, 任何人类对自然的改造都要符合自然规律。虽然森林的生态效益是公认的, 但是大多数人忽视了人工林对水文会产生何种影响。在北方干旱地区大规模造林, 将加剧干旱状况。

中国北方多数地方水资源紧缺。但是, 为了提高大树成活率, 许多造林地都需要采用抽取地下水灌溉。这种情况从北京到内蒙古到黄土高原都很常见。这些地方实际上应该种植灌木或草本而非大乔木。通过对比年降雨量和树木的蒸腾量, 我们发现, 很多地区杨树林年用水量超过天然降水, 这样的林子不可能成林, 即使成林也不可持续。如果不给浇灌, 即使这些林子能暂时成活, 当表层土壤水份被吸收待尽, 整片林子都将死亡。个别树木在低凹地带或被阴地带

长期以来人们认为森林能像海绵一样吸收雨水并在一年中缓慢释放雨水从而稳定河流流量的想法是不准确的。实际上, 树木对土壤水份的蒸腾要远大于裸露地对水份的散失。树木就象一个抽水机, 为了吸收二氧化碳、进行光合作用、生产供一切动植物使用的生物能, 必须源源不断地吸收水份并散失水份。

从世界植被的自然分布我们可以看出, 森林分布在湿润型的寒带、温带和热带雨林地区。大面积的森林一般都生长在年降水量为600毫米以上的湿润地区或半湿润地区。在半干旱的温带和热带, 分布着大面积的稀树草原, 即土壤水份不能维持高密度的森林, 但可以维持非常稀的树林, 如非洲的稀树草原。当降雨量继续降低, 任何乔木都不能生存, 只有耐旱的灌木和草本植物能生存, 比如中国的内蒙古草原、美国的高草草原。草原的存在是因为草本植物能在雨季来临时快速生长并完成生命周期, 而在干旱季节死亡或休眠。如降雨量继续降低, 就成为沙漠地区, 只有一些特殊的植物, 如仙人掌类能生存。

一般认为, 在年降雨量小于400毫米的地区是不适合种树的。在降雨量大的地区造林, 森林可以缓解径流, 通过涵养一部分水源, 使降雨细流化, 调节地下水资源。而在干旱地区或半干旱地区, 如果大面积的种植树木, 因为没有足够的水资源来供给树木生长造成树木的枯亡, 结果不可避免的是: 年年种树年年死。虽然每年的植树量可以作为业绩被统计了, 树木的存活量往往被忽略不计。如果有些树木适应环境生存下来了, 也可能因此引起土地的更加干燥, 因为不多的水资源都被大面积的树林所吸收和蒸腾蒸发了, 且造成树林和人蓄争水的现象。因此干旱地区是不应提倡大力植树造林。

要正确认识造林地的水源涵养作用。如多数人认为, 造林能增加降水, 减少洪水, 认为造了林就等于修了水库。世界各地研究结果森林的作用并非如此简单。森林的作用不可低估, 但也不能无限夸大。中国应该加强对造林地生态水文过程的研究。首先, 一个地区的降雨量主要受大气环流的影响。虽然, 森林对一个地区的微气候(湿度、温度)有一定的影响, 但对森林降雨量的影响甚微。

同样, 要正确认识森林增加河流的径流量。事实上, 森林对径流量的影响是多方面的, 森林能起到调蓄洪水的作用。森林对洪水的调蓄主要表现在它可以调蓄15%—30%的降雨量; 而且, 它的枯落物层可以调蓄2%—5%的降雨量; 另外, 它根部的土壤可以持续储存大量水分。但是, 不同的地域、不同森林、不同土壤、不同地形地势可能会有不同的调蓄量。研究还表明, 林下植被的密度、结构和种类不同, 对于森林的调蓄能力也大不相同。因此, 要充分发挥森林的调蓄水的作用, 造林时就要注意森林的结构、种类组成等生态学原理。

我们的建议是, 为减少水土流失和风沙侵蚀, 在中国北方干旱地区要恢复自然植被, 即以本地种的灌木和草本为主。要强调生态恢复, 减少人为破坏和干扰, 让自然生态系统自然地恢复其功能。在造林问题上, 我们不能只见树木, 不见森林; 也不能只见森林, 不见生态系统。科学造林, 不仅是造林, 更是恢复一个多功能的、多样性的生态系统。

中华海外生态学者协会在森林水文、森林生态和造林方面有很多优秀的专家和学者, 我们希望能够有更多机会在这一领域为祖国服务。

Sino-Eco hosted an Organized Oral Session for ESA 2009

Jim Tang

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In the Ecological Society of America (ESA) 2009 annual meeting in Albuquerque, NM, Sino-Eco hosted an Organized Oral Session on August 6, 2009, entitled “Roles of Ecological Science in Combating Global Change and Natural Disasters and Working Toward Sustainability of a Global Society: Lessons from China.” This session was organized and moderated by Jianwu Tang and co-organized by Xiaohua Wei and Chao Liang, and supported by Asian Ecology Section of the Ecological Society of America and Environment & Public Health Network For Chinese Students and Scholars. The objective of this session is to address how ecological principles and technologies, both theoretical and applicable, are used in China to combat global change and natural disasters and to fulfill a goal of sustainability. The presentations covered broad areas in carbon cycles, water resources, land-use change, ecological restoration and conservation in China. The speakers include Asko Noormets, Ge Sun, Xiaojun Lu, Shiqiang Wan, Xiaojun Kou, Keala Hagmann, and Xuemei Han.

China’s reforestation in the arid Loess Plateau



Left photo:

Reforestation has been making much progress in China in the past three decades to control soil erosion and restore the degraded ecosystems. However, is it sustainable to plant trees in the arid Loess Plateau? Will water resource scarcity be exacerbated by reforestation in this area? Photo taken by Dr. Jianwu Tang in the fieldtrip in the Loess Plateau with Dr. Ge Sun and local Chinese colleagues in June 2009.

Global Warming: The legacy of our past, the challenge for our future

The 95th ESA annual meeting will be held in Pittsburgh PA on 1-6 August 2010.

The Call for Contributed Oral and Poster Abstracts is open! Submission deadline is February 25, 2010.

Annual Sino-Eco Meeting Albuquerque, New Mexico, August 6, 2009



♣ It was estimated over 40 Sino-Eco members and friends attended this year's Annual ESA Meeting. As usual, a dinner gathering was held in a local Chinese restaurant to renew our friendship of the old and make new friends. A major feature of this year's gathering was that we saw many new faces, and several large delegations from China (i.e., Chinese Academy of Science, Beijing Normal University) attended the event. During the meeting, Sino-Eco T-shirts were distributed to all members. Our members all liked the designs that symbolize '龙的传人for blue sky'. Although the event was organized later of the week and quite a few members had to excuse, but we still had over 20 members who made it to the evening gathering. The food was great and the laughters will stay with us for ever. We made a wish to meet again in 2010 in Pittsburgh, PA. (Reported by **Dr. Ge Sun**)

New membership or renewal online

Please click the link <http://www.sino-eco.org/membership.html>

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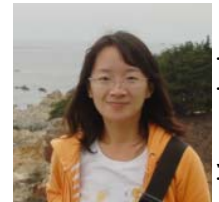
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Dr. Ge Sun received a Global Stewardship Award from US Forest Service Southern Research Station for “*Outstanding contributions to international collaborative research on climate change and forest hydrology that fosters global natural resources conservation and sustainable development*”.

Dr. Hong Liu, (hliu@fiu.edu) became one Associate Editor for *Biological Invasions* who will handle manuscripts on plant-animal interactions as well as those from Asia. She would like to encourage Sino-Eco colleagues to submit relevant ms to the journal.

Dr. Lingli Liu was selected as a DISCCRS V Symposium Scholar working on climate change, DISCCRS, Dissertations Initiative for the Advancement of Climate Change Research, is supported by U.S. National Science Foundation (NSF) and a pending proposal to the U.S. National Aeronautics and Space Administration (NASA).



with permission



In August 2009

Yushun Chen, the current Sino-Eco member, obtained his Ph.D degree in West Virginia University. Dr. Chen is now working for his joint Post-Doc position with Dauphin Island Sea Lab, Grand Bay National Estuarine Research Reserve, and NOAA National Coastal Data Development Center

In December 2009

Jianguo Huang, the current Sino-Eco member, obtained his Ph.D degree in Environmental Sciences at the University of Quebec. Dr. Huang will take a postdoctoral research associate position at the Department of Renewable Resources of the University of Alberta, Canada since January 2010.

Wei Ren, the current Sino-Eco Executive committee member, received her Ph.D degree from Auburn University. Dr. Ren will take a postdoctoral research associate position in Ecosystem Dynamics and Global Ecology Laboratory (EDGE) at Auburn University, starting in January 2010. She will continue to work on the effects of climate change and air pollution on terrestrial ecosystems in Asia and North America.

Congratulations !

Suggestions to optimize the agricultural nutrient management in China

Jianwei Li

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With a three-decade high-speed development and recent rising funding in basic sciences in China, the agricultural nutrient management and relevant policy-making attracted increasing attentions from governments, organizations and institutions. A most recent survey on nitrogen (N) fertilizer efficiency in China revealed that the current typical N fertilization rate increased little in grain yield but significantly deteriorated the N loss to the environment, specifically via denitrification in waterlogged upland system, and ammonia volatilization and nitrate leaching in the irrigated system of North China Plain (1). The excessive fertilizer input in Chinese agricultural systems became more prominent in contrast to the long-term agricultural systems in other countries. Comparing the nutrient budgets (N and P) of corn-based system in Kenya, China and US, P.M. Vitousek et al. pointed out alarming nutrient imbalances in Chinese agricultural systems (2). With the increasing awareness by the general public and the government's desire to construct the "Green and Ecology" society, it is time for the country to optimize its agricultural nutrient management at the long-term and national scale.

Frugal fertilizer input — The Chinese agricultural systems have been intensively managed for many centuries, and become more extremely degraded due to the recent overwhelming chemical fertilizers consumption. The astonishing nutrient imbalances in China can be blamed on pursuit of high crop yield alone, neglecting the environmental and ecological consequences. Significant reduction in fertilizer inputs, applying new types of fertilizers, fertilization at optimal growth period and accounting other nutrient sources (agricultural manures and residues, atmospheric deposition, irrigation and biological fixation) can minimize the adverse effects and to maintain a relatively high crop yield as well.

Ecological consequences — The emerging pandemic human health problems at some villages or cities raised my concerns if their causes are associated with the malfunction of the agricultural system. Not much research has been done to link them. The ecological consequences of nutrient imbalances should be little neglected, specifically linking the agricultural system malfunction with the degradation of the terrestrial and aquatic biological systems, water quality, the transport of contaminants and the recent pandemic human health.

Long-term monitoring network — China has a very diverse agricultural systems and management practices. To optimize the nutrient management in the country, the site-specific solutions are always needed such as farmer education and proper technology application. The long lasting or on-going monitoring sites and stations widely distributed in the country should be reassembled and synthesized to characterize the nutrient status across the diverse cropping systems. The inter-institutional collaborations and joint efforts at the national or provincial levels should be prioritized for hatching the wise and sustainable policy.

An integrative measure and policy on the nutrient issue will help meet the increasing demand for food, alleviate resource constrain during development and promote human living quality as well.

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Fellow Interview

By Xubin Pan, the current Sino-Eco Executive Committee member, sino.eco@gmail.com

今年是协会成立 20 周年，伍业钢博士希望撰写一部协会发展历史和记录重要事件的文章，作为今年沈阳会议出书的一部分。现委托我对协会的会员进行一个采访，希望大家能积极参与。请将以下两个问题的回复和您的简历和彩色照片发到我的邮箱（sino.eco@gmail.com），谢谢！相关内容将会发表在这部著作里面和协会的 Newsletter 上，我们也将尝试联系《神州学人》等杂志，进一步宣传协会。

- 1、请您给我们讲述一件您和中华海外生态学者协会之间的故事。
- 2、请您回顾一件你在从事生态学相关领域研究中有意义有趣的事情或者发现。

以下是伍业钢博士和林俊达教授的故事

伍业钢：朋友、服务、还有钱

一九八八年夏天，美国生态学年会在加州大学戴维斯分校召开。那时是我刚到美国怀俄明大学的第一年，正在山里做野外样方调查。我导师却让我从山里风尘仆仆地赶到戴维斯参加这一年的美国生态学年会。我没有论文提交，也就不需要作报告，自然是挺轻松的。这也是我导师的意思，轻松轻松、长长见识。

也就在会议期间，参加了刘秦勤组织的中国留学生聚会。后来知道，为了这次聚会，骆亦其、黄长志、王泉录都忙活了好几天（他们应该是 Sino-Eco 的第一召集人吧）。与会的同学大多来美国时间都比我早，好像也没有谁像我这样刚从山上下来的。总觉得他们都特懂美国，我也挺喜欢听大家海阔天空地侃大山。尤其是邬建国和武昕原有声有色地给大家解释如何用 Bitnet——那可是 E-mail 的老祖宗了，那个稀奇，都可以叫大家窒息。“要是每个人都有 Bitnet，那大家不都连在一起了（那时还没有“联网”这个说法呢）？”许多人都喊着（这可能是 Sino-Eco 的最原始的提议了吧）。

说到搞个什么组织时，听到最多的是刘秦勤介绍的中国留学生和学者的“农学会”，这个当时席卷全美的最大的中国留学生和学者组织，其辉煌的历史和其暗淡的结局，对大家无疑是“沉重”的。看来，组织起来容易，维持下去难。也许，我们大家作为朋友，先来一个“Club”试一试吧。这应该是戴维斯最重要的一个共识了。

理想中的组织起来和用 Bitnet 联系起大家，在实际中并不容易。对于许多人来说，在那个年代，设立一个 Bitnet 户头的难度，是不可想像的。没有 Bitnet，与大家的联系只能靠“古老”的方法邮寄 Newsletters。给大家服务，邮寄 Newsletters，对于当时穷研究生的“三 Wu”应该是一个不大不小的考验。当时，每一枚邮票是 25 美分，一打鸡蛋 On Sale 时就才 12 美分。开始时的 30 多名“创始会员”还好应付，但很快就过百了。好在一年后，Sino-Eco 的“筹备”期也圆满结束，迎来第一届 Sino-Eco Leadership。

接下来，为了“钱”，我 Volunteer 做了第一届 Sino-Eco 的第一任 Treasurer，并第一次在 Utah 州注册 Sino-Eco 作为非盈利组织。我当时在 Wyoming 州的怀俄明大学，为什么不在 Wyoming 州注册，而要在 Utah 州注册，至到如今，我也挺纳闷的。无论如何，注册后，我就拿着这个“合法组织”到怀俄明大学的“国际学生部”要求资助。刚好新来上任的部长是华人蔡先生，特别的热情和支持，慷慨答应给我们 500 美元的资助，分两个学期给，每个学期 250 美元。那可是 Sino-Eco 幸运的“第一桶金”！

二十年了，我想 Sino-Eco 能走到今天，这与大家做朋友的心态、奉献服务的精神和本分用钱的管理是多多少少有关系的。继续往前走，Sino-Eco 只会更好！

林俊达: “维持会长”和 *Lysmata jundalini*

1. *I'm not sure if you're interested in event only during the founding of Sino-Eco or the whole history, so I'll provide a few items for your consideration:*

Shortly after the Sino-Eco was formally established (in 1990 I believed), I visited U. Georgia (Athens) and stayed with Jianguo Liu, then a graduate student there and the first Sino-Eco president. We stayed up and talked all night to the early morning, discussed the future of the Sino-Eco. We were young, idealistic, and yes, naive and envisioned Sino-Eco became a prominent professional organization, with its own scientific publication etc. Shortly after that, I got a faculty job, probably the first Sino-Eco member to do so in North America and wrote an article on Sino-Eco newsletter providing advices on job hunting. I was told years later that it had some impact. I served as the Treasurer during the second year of Sino-Eco which grew well in early years, with more students coming from China and more members finishing degrees and obtaining faculty and other professional positions. Then in mid-90's, there was an ugly chapter of alleged and disputed election that seriously fractured the young club. A couple of year later, I was asked to run for the president. I reluctantly agreed, not willing to see the club going down the tube. It was probably the most difficult two years of the organization. Membership dwindled and people bickering all the time. A founding member even suggested to dissolve the club all together. I "fought back" hard and the club survived (barely). I was basically the "Wei Chi Hui Zhang" (Maintenance President). However, I did manage to co-edit an award-winning book (see my attached c.v. for detail), organizing several Sino-Eco members to contribute about half of the chapters in the book, with the remaining written by colleagues in China (some chapters were joined-efforts). In addition, I have also contributed chapters to the books published or organized by Sino-Eco (again see my c.v. for details). The term of the president was one year, but nobody wanted to run when my term was up. I had to change the by-law to increase the term from one to two years and continued to serve one more year, and worked very hard to convince my successor to run and take it over from me! Then things turned around. Senior members stepped up and more new members became interested in seeing the club continue and grow. The rest, as you probably know, is history.

2. *As far as interesting or meaningful research or discovery goes, one of my research focuses is the reproductive biology of a unique group of ornamental shrimp.*

The shrimp has a reproductive system called protandric simultaneous hermaphroditism. An individual first matures as a male, then with grow may change to simultaneous hermaphrodite, with both male (during inter-molt) and female (during post-molt) functions. They cannot self-fertilize or store sperm. This provides an opportunistic model for studying sexual selection, evolution and speciation. Since a simultaneous hermaphrodite individual can function as a male and a female, any two individuals can mate. We published a paper with part of the title "any two will do?" (question mark refers to the fact that a proportion of the population - depends on the population size - remains as males) in *Marine Biology*, a top journal in our field (see my c.v., Lin and Zhang 2001, for citation). Interestingly, the same article was published twice in the same issue. (any two will do!) Recently, we found out that not any two will do, as different populations of the same species, due to geographical separation, may not successfully produce viable offspring. And the relationship is not symmetrical. For example, male function of population A may successfully mate with female function of population B, but not vice versa. Please see Rhyne et al. 2009 in my c.v. as an example. This asymmetrical mating is one of the current focuses in my lab (through different approaches such as sex pheromone characterization, receptor ultrastructure and behavioral assay).

To finish the sexy story of the shrimp, we found out that although most of the shrimp changed to simultaneous hermaphrodite with grow, some stay on as males and the proportion depends on the population size and sex ratio and the ratio will be adjusted when immigration/emigration, mortality/recruitment happens. So the natural question I asked was "Why male"? i.e. why do some shrimp not change to both male/female? The logic answer is that males, being specialized, may be more effective in mating and/or producing better sperm. We compared the male phase and male-function of simultaneous hermaphrodite phase shrimp in their male performance and found very slight advantage of mating for the male phase and no difference in fertilization rate. So this is still a mystery. Our hypothesis is that it acts as an "insurance policy" to ensure that there will always be males ready to mate during the short post-molt period when a shrimp can function as female, but this wades into the controversial "group selection" debate.

(Continued ..)

O.K. now to the other story. Over 10 years ago, we published a paper describing the technology to rear the larvae of the shrimp (*Lysmata*) to postlarvae in about 24 days. A company used our technique to commercially produced the species, but could not complete the larval cycle until over 70 days, sometimes even 100 days (larval culture is the most expensive and difficult part of aquaculture, so short larval cycle is very important in the viability of commercial production). So the company called me for help. I took a look of the facility and could not find anything they did wrong. Only thing I noticed was that their broodstock shrimp look different from what I used, although they were supposed to be the same species. It was then I began to realize that there may be multiple species with different larval durations. So one of my Ph.D. students began to work on the phylogenetics of this group of shrimp (testing reproductive isolation, genetics, morphology, larval duration etc.) and found out that there were several, instead of one, distinct species. This became the most important component of his dissertation and we published the long paper (Rhyne and Lin 2006) describing four new species and clarified the confusion. Andy Rhyne has continued to find more new species and is naming one of them after me (*Lysmata jundalini*) to honor my pioneer work in this unique group of shrimp. (*The End*)

If you are interested in the two questions, Please email your answers and story to Mr. Xubin Pan,

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Thank you for your contributions!



<http://www.sino-eco.org/>

Please click the above link to visit the homepage of Sino-Eco.

Any comments to Sino-Eco webpage

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