

**U.S. GEOLOGICAL SURVEY
BIOLOGICAL RESOURCES DIVISION**

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SUBJECT: Survey of USBRs

Per our discussion, I've enclosed the format for the preliminary assessment of indicators of US BR performance. The format was developed by the BRD Directorate (principally Humke, Bohne, Gregg) to provide information to assist BR managers in implementing BR concepts. Managers would use the survey results to help identify opportunities for strengthening BR functions through local initiatives, and in developing proposals for co-funding consideration through the Directorate's core proposal (the "20-in-2000 Campaign"). The survey of BR functions was intended to complement a proposed gap analysis of biodiversity in US BRs, which the National Committee had supported as part of the Directorate's program the previous year.

The survey approach called for USMAB's Biosphere Reserve Coordinator (Elizabeth Owen) to fill out the survey form in draft for each site based on available information (i.e., the 1987 UNESCO survey, surveys of USBR managers in 1991 and 1995, USMAB case studies, the knowledge of Directorate members, and discussions with managers). In the process, the BR Coordinator would become familiar with US BR capabilities and programs. The survey was designed to provide qualitative ratings for important indicators of BR performance in each designated site (and, for BRs containing multiple sites, for the BR as a whole as well). The indicators -- based on goals of the USMAB Strategic Plan and the Seville Strategy -- covered research and assessment, communication, management and infrastructure, spatial design, local participation, regional partnerships, and international coordination.

The Directorate would send the completed draft survey form along with a request for Capability and Interest Statements to identify candidate BRs for participation in the "20-in-2000 Campaign". The manager would return the survey, corrected and revised as appropriate, to USMAB along with the C&I statement, if desired, indicating interests in participating in the Directorate's proposed core program. The Directorate's proposed instructions are attached. However, the survey was not

conducted because the National Committee did not approve the Directorate's proposal and the BR Coordinator's program end up focusing on other tasks.

Jen Gaines and I tested the survey instrument at the Organ Pipe Cactus BR and the Southern Appalachian BR, where were quite familiar with the reserves' activities. My recollection is that the form took about an hour to complete for Organ Pipe where we rated the one site, and about two hours for Southern Appalachian BR (where we rated 5 existing and 1 proposed site plus the BR as a whole) Copies of the rating sheets are provided.

The Directorate's approach of using qualitative ratings developed initially by a single MAB surveyor and refined by BR managers differs from the Australian approach, which relies more on narrative information prepared by the BRs. The Directorate's approach reduces inconsistencies due to multiple preparers (although managers still have the opportunity to revise the surveyor's ratings), and facilitates site comparisons. The Australian format enables the manager to provide more detailed information, and possibly a more complete overview of specific programs and benefits.

I look forward to discussing this with you further.

/BR/survey97.01

ATTACHMENTS (3)

ATTACHMENT TO DIRECT MAILING OF CALL TO BIOSPHERE RESERVE MANAGERS
AND COORDINATORS OF BIOSPHERE RESERVE NOMINATIONS (NOT SENT)

Preliminary Assessment of U.S Biosphere Reserves. The Directorate has prepared an initial preliminary qualitative assessment of U.S. biosphere reserves, and several areas under consideration for nomination, with respect to the internationally recognized functions of biosphere reserves. The indicative rankings for each area consider information from a 1987 UNESCO survey of biosphere reserves, 1991 and 1995 surveys of U.S. Biosphere Reserve managers, case studies of U.S. biosphere reserves, and the personal knowledge of Directorate members. We have attached the assessment sheet for your biosphere reserve or potential nomination.

We have prepared initial preliminary ratings for each biosphere reserve on a qualitative 4-point scale with respect to ten functions: inventory and monitoring; research; education and outreach; communication; management and infrastructure; spatial design; local participation; local cultural, social and economic values; regional partnerships, and international cooperation. Higher ratings indicate greater capability, accomplishment and ongoing activity in carrying out the function. For most functions, the highest rating (i.e., 4) is given in cases where the function is being coordinated and integrated with other functions through a cooperative regional program that identifies with biosphere reserve goals. For most functions, ratings are provided for several areas of activity that are particularly indicative of fully functional biosphere reserves. The overall rating for each function (recorded in the upper right corner of the rating sheet) is the average of the activity ratings.

For biosphere reserves including multiple sites (i.e., most biosphere reserves designated since 1981), we have given each site a qualitative rating for each activity and have also given a composite rating for the biosphere reserve as a whole. Because the designated sites in such biosphere reserves often work synergistically in implementing particular functions regionally, the rating for the whole biosphere reserve may be higher than for any of the included sites. Alternatively, if the sites are working independently (i.e., little or no synergy), the rating for the whole biosphere reserve may be lower than the rating for one or more of the included sites.

The rating sheets may assist you in identifying gaps in biosphere reserve functions, and opportunities for effective use of catalytic funding or support from U.S. MAB. We encourage you to send any suggested revisions to our preliminary ratings for your biosphere reserve, along with any notations you wish to provide on the rationale for the changes (an informal mark-up of the rating sheets will do). If you submit a C&I Statement, these revisions should accompany your submission. If you do not plan to submit a C&I statement, we would nevertheless appreciate receiving your revisions by (Nov??). The Directorate will consider the revised rating sheets, in concert with the C&I statements, in identifying candidates for the 20-in-2000 campaign.

Biosphere Reserve: Organ Pipe Cactus (OP) [includes cooperative area with Sonoran Desert (SD)]
Inventory and Monitoring

Rating 2.00

| Rating | Inventory of Biological Diversity | Ecosystems | Species | Environmental Monitoring | National Monitoring criteria ² |
|--------|---|------------|---------|---|---|
| 0 | No information or activity | | | No activity | |
| 1 | Very limited inventory, records of variable quality | | | Limited monitoring of selected core parameters | OP |
| 2 | Complete for some categories/taxa, records of variable quality | | | Majority of core parameters being addressed | |
| 3 | Current complete high quality information for some categories/taxa | OP | OP | Appears to meet environmental index site requirements | |
| 4 | Current comprehensive high quality information for most categories/taxa | | | Meets requirements for one or more environmental index sites plus is involved in additional monitoring activities | |

² A Framework for Monitoring the Nation's Natural Resources, Environmental Monitoring Team, Committee on the Environment and Natural Resources, National Science and Technology Council

Research and Assessment

| Rating | | biodiversity | sustainable use | regional and global environ- mental change | environmental pollution | interdisciplinary research (natural/ social science) |
|--------|---|--------------|-----------------|--|----------------------------|--|
| 0 | No program | | | | | |
| 1 | Very limited program | | | | | |
| 2 | Limited program with potential for expanding into additional areas | | OP | OP | OP | OP |
| 3 | Major emphasis of program | OP | | | | |
| 4 | Important regional center for research activity | | | | | |

Education and Outreach

| Rating | | Professional training (including BR staff) | public media | community outreach | visitor interpretive programs | demonstrations of conservation in sustainable use methods |
|--------|---|--|--------------|--------------------|-------------------------------|---|
| 0 | No activity | | | | | |
| 1 | Limited activity | | | | | |
| 2 | Ongoing activity carried out under site objectives consistent with biosphere reserve concepts | OP | OP | | | |
| 3 | Multiple activities covering some biosphere reserve concepts | | | OP | OP | OP |
| 4 | Comprehensive program explicitly related to biosphere reserve concepts | | | | | |

Communication (Part 1)

| Rating | Electronic Communication | electronic capabilities | Networks | communication networks ¹ |
|--------|---|-------------------------|---|-------------------------------------|
| 0 | None | | No participation | |
| 1 | Low end system, no connectivity | | Ad hoc communication with other BRs, protected areas & MAB sites (case by case) | |
| 2 | Up to date system, internal networks (e-mail), no external connectivity | | Participant in ACCESS directory & ad hoc participation in networks | |
| 3 | Up to date system, internal and external connectivity (e-mail, Internet) | OP | Participant in ACCESS directory and active participant in single network | OP |
| 4 | High end system with internal network system and also external T-1 connection to Internet | | Active participant in multiple networks, including MAB networks | |

¹ Including the Northern Science Network, EuroMAB, MABNetAmericas, MABFauna, and BioMon

Communication (Part 2)

| Rating | Stakeholder communication | communication with stakeholders | Information exchange | exchange scientific information/ technology | management experience |
|--------|---|---------------------------------|--|---|-----------------------|
| 0 | No activity | | No activity | | |
| 1 | Ad hoc communication on particular issues | | Occasional interaction in response to specific requests | | |
| 2 | Regular communication on regional issues | | Regular exchange on particular topics | | |
| 3 | Participation in existing regional frameworks for communication (may not be associated with BR) | | Structured exchange (e.g., committees, working groups) | | OP (SD) |
| 4 | Permanent regional mechanism for enhancing stakeholder communication in the biosphere reserve | OP (Sonoran Desert Alliance) | Permanent framework for exchanges, regular participation in MAB forums | OP (SD) | |

Management and Infrastructure

| Rating | | Cooperative Planning | Management Infrastructure (i.e., libraries, laboratories, operational support, office equipment) | Staff | Availability of basic resource information (i.e., photos, maps, historical records, climate, etc.) |
|--------|---|----------------------|--|-------|--|
| 0 | None | | | | |
| 1 | Limited and inadequate to achieve any of the six goals of U.S. Biosphere Reserve Program (USBPR) ¹ | | | | |
| 2 | Generally adequate to achieve one or two USBPR goals | OP | OP | OP | OP |
| 3 | Generally adequate to achieve most USBPR goals | | | | |
| 4 | Fully adequate to achieve all USBPR goals | | | | |

¹ Goals include: 1) Policy and Program Operations; 2) Network Development; 3) Local Participation; 4) Research; 5) Education; and 6) Communication. From the Strategic Plan for the U.S. Biosphere Reserve Program, Biosphere Reserve Directorate of the U.S. Man and the Biosphere Program, 1994.

Biosphere Reserve: Organ Pipe Cactus (OP) [includes cooperative area with Sonoran Desert (SD)]
Spatial Design

Rating 3.25

| Rating | | Protected areas (a.k.a. core areas) | | Multiple use areas (a.k.a. areas of managed use or buffer zones) | | Cooperative areas (a.k.a. transition areas) | | Connectivity |
|--------|--|-------------------------------------|---|--|--|---|--|--------------|
| 0 | Not applicable | | None | | None | | None | |
| 1 | Inadequate to achieve conservation goals | | Ad hoc management for individual uses within the BR unit | | Ad hoc cooperation with immediate neighbors | | Limited effort within designated BR unit | |
| 2 | Adequate to achieve conservation goals for a few ecosystems/taxa | | Multiple uses within the context of a management plan for the BR unit | OP | Established regional partnerships for particular activities and functions | | Ad hoc cooperation and management with adjacent areas on key issues | |
| 3 | Adequate to achieve conservation goals for many ecosystems/taxa | OP | Multiple uses within the context of a regional cooperation plan | | Cooperative area defined by specific BR program activities, boundaries not delineated | | Cooperative regional plan for selected ecosystems/ taxa (e.g. riparian areas) | |
| 4 | Adequate to achieve conservation goals for most ecosystems/taxa & is part of an integrated regional BR program | | Part of an integrated regional program for achieving BR goals for sustainable use | | Part of an integrated regional program for effectively achieving BR goals of cooperative area and recognized by stakeholders, with boundaries delineated | OP (SD) | Important areas for conservation and are linked through stakeholder cooperation in an integrated regional program for effectively achieving BR goals | OP (SD) |

Biosphere Reserve: Organ Pipe Cactus (OP) [includes cooperative area with Sonoran Desert (SD)]

Rating 3.00

Local Participation

Social, economic values

| Rating | | access to scientific information, management experience and technologies | sustainable economic uses benefiting local communities (e.g., tourism/recreation) | employment | traditional and cultural uses and values | developing and implementing BR roles |
|--------|--|--|---|------------|--|--------------------------------------|
| 0 | None | | | | | |
| 1 | Limited ad hoc participation | | | | | |
| 2 | Participation focused on particular site | | | OP | | |
| 3 | Regular consultation and participation in addressing regional cultural, economic, and environmental issues | OP | OP | | OP (SD) | |
| 4 | Organized participation through local governments, organizations, and citizens in regional BR program | | | | | OP (SD) |

Biosphere Reserve: Organ Pipe Cactus (**OP**) [includes cooperative area with Sonoran Desert (**SD**)]

Rating 3.00

Regional Partnerships

| Rating | Regional Partnerships | Indicate BR status in appropriate box |
|--------|---|---------------------------------------|
| 0 | None | |
| 1 | Partnerships focus on site management | |
| 2 | Some partnerships between site and other individual stakeholders on regional issues | |
| 3 | Broad partnerships involving multiple stakeholders to address regional issues | OP (SD) |
| 4 | Regional MAB Cooperative established to integrate BR roles | |

International Cooperation

Rating 4.00

| Rating | International Cooperation | Indicate BR status in appropriate box |
|--------|--|---------------------------------------|
| 0 | None | |
| 1 | Ad hoc contacts and information exchange | |
| 2 | Occasional international professional exchanges on topics of mutual interest | |
| 3 | Ongoing cooperation with another international entity or site | |
| 4 | Ongoing, organized cooperative program involving other biosphere reserves | OP (SD) |

| | | | | | | | | | | | |
|----------|--------------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------------|----------------|---------------------|-----------------------|---------------------------|---|
| Function | Inventory and Monitoring | Research and Assessment | Education and Outreach | Communication (Part 1) | Communication (Part 2) | Management and Infrastructure | Spatial Design | Local Participation | Regional Partnerships | International Cooperation | Composite Rating for Organ Pipe Cactus (OP) [includes cooperative area with Sonoran Desert (SD)] BR |
| Rating | 2.00 | 2.20 | 2.60 | 3.00 | 4.00 | 2.00 | 3.25 | 3.00 | 3.00 | 4.00 | |

Biosphere Reserve: Southern Appalachian (SA)

Rating 3.25

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Inventory and Monitoring

| Rating | Inventory of Biological Diversity | Ecosystems | Species | Environmental Monitoring | National Monitoring criteria ² |
|--------|---|--------------------------|-----------------|---|---|
| 0 | No information or activity | | | No activity | |
| 1 | Very limited inventory, records of variable quality | | GM, TG, OAK, MM | Limited monitoring of selected core parameters | GM, MM TG |
| 2 | Complete for some categories/taxa, records of variable quality | | CW | Majority of core parameters being addressed | CW, GSM |
| 3 | Current complete high quality information for some categories/taxa | TG | GM, SA | Appears to meet environmental index site requirements | OAK, SA |
| 4 | Current comprehensive high quality information for most categories/taxa | GSM, GM, MM, CW, OAK, SA | | Meets requirements for one or more environmental index sites plus is involved in additional monitoring activities | |

² A Framework for Monitoring the Nation's Natural Resources, Environmental Monitoring Team, Committee on the Environment and Natural Resources, National Science and Technology Council

Biosphere Reserve: Southern Appalachian (SA)

Rating 3.60

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Research and Assessment

| Rating | | biodiversity | sustainable use | regional and global environmental change | environmental pollution | interdisciplinary research (natural/social science) |
|--------|--|---------------------|-----------------|--|-------------------------|---|
| 0 | No program | | | | | MM, TG |
| 1 | Very limited program | TG, CW, GM, MM, OAK | MM, TG | GM | TG, GM | GM, OAK, CW |
| 2 | Limited program with potential for expanding into additional areas | | GM, GSM | GSM, TG, MM | CW | GSM, SA |
| 3 | Major emphasis of program | GSM | OAK, CW | CW | GSM, MM | |
| 4 | Important regional center for research activity | SA | SA | OAK, SA | OAK, SA | |

Biosphere Reserve: Southern Appalachian (SA)

Rating 3.20

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Education and Outreach

| Rating | | Professional training (including BR staff) | public media | community outreach | visitor interpretive programs | demonstrations of conservation in sustainable use methods |
|--------|---|--|--------------|--------------------|-------------------------------|---|
| 0 | No activity | | | | | |
| 1 | Limited activity | CW, GM, OAK, MM, TG | CW, TG | OAK, MM | CW, OAK | MM, TG |
| 2 | Ongoing activity carried out under site objectives consistent with biosphere reserve concepts | | OAK, MM | CW, TG | MM, TG | GM, CW, GSM, OAK |
| 3 | Multiple activities covering some biosphere reserve concepts | GSM, SA | GM, GSM, SA | GM, GSM, SA | | SA |
| 4 | Comprehensive program explicitly related to biosphere reserve concepts | | | | GM, GSM, SA | |

Biosphere Reserve: Southern Appalachian (SA)

Rating 4

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Communication (Part 1)

| Rating | Electronic Communication | electronic capabilities | Networks | communication networks ¹ |
|--------|---|-------------------------|---|-------------------------------------|
| 0 | None | | No participation | TG |
| 1 | Low end system, no connectivity | TG | Ad hoc communication with other BRs, protected areas & MAB sites (case by case) | MM |
| 2 | Up to date system, internal networks (e-mail), no external connectivity | GM, MM | Participant in ACCESS directory & ad hoc participation in networks | GM |
| 3 | Up to date system, internal and external connectivity (e-mail, Internet) | | Participant in ACCESS directory and active participant in single network | CW, OAK |
| 4 | High end system with internal network system and also external T-1 connection to Internet | OAK, CW, GSM, SA | Active participant in multiple networks, including MAB networks | GSM, SA |

¹ Including the Northern Science Network, EuroMAB, MABNetAmericas, MABFauna, and BioMon

Biosphere Reserve: Southern Appalachian (SA)

Rating 4

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Communication (Part 2)

| Rating | Stakeholder communication | communication with stakeholders | Information exchange | exchange scientific information/technology | management experience |
|--------|---|---------------------------------|--|--|-----------------------|
| 0 | No activity | | No activity | | |
| 1 | Ad hoc communication on particular issues | GM, MM, TG | Occasional interaction in response to specific requests | TG, MM | |
| 2 | Regular communication on regional issues | CW | Regular exchange on particular topics | GM | |
| 3 | Participation in existing regional frameworks for communication (may not be associated with BR) | GSM, OAK | Structured exchange (e.g., committees, working groups) | OAK | |
| 4 | Permanent regional mechanism for enhancing stakeholder communication in the biosphere reserve | SA | Permanent framework for exchanges, regular participation in MAB forums | CW, GSM, SA | |

Biosphere Reserve: Southern Appalachian (SA)

Rating 3.00

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Management and Infrastructure

| Rating | | Cooperative Planning | Management Infrastructure (i.e., libraries, laboratories, operational support, office equipment) | Staff | Availability of basic resource information (i.e., photos, maps, historical records, climate, etc.) |
|--------|---|----------------------|--|------------------|--|
| 0 | None | | | | |
| 1 | Limited and inadequate to achieve any of the six goals of U.S. Biosphere Reserve Program (USBPR) ¹ | CW, MM, OAK, TG | MM, TG | MM, TG | TG |
| 2 | Generally adequate to achieve one or two USBPR goals | GM, GSM, SA | CW, GM, GSM, OAK | CW, GM, GSM, OAK | CW, GM, GSM, OAK, MM |
| 3 | Generally adequate to achieve most USBPR goals | | | SA | SA |
| 4 | Fully adequate to achieve all USBPR goals | | SA | | |

¹ Goals include: 1) Policy and Program Operations; 2) Network Development; 3) Local Participation; 4) Research; 5) Education; and 6) Communication. From the Strategic Plan for the U.S. Biosphere Reserve Program, Biosphere Reserve Directorate of the U.S. Man and the Biosphere Program, 1994.

Biosphere Reserve: Southern Appalachian (SA)

Rating 2.75

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Spatial Design

| Rating | | Protected areas (a.k.a. core areas) | | Multiple use areas (a.k.a. areas of managed use or buffer zones) | | Cooperative areas (a.k.a. transition areas) | | Connectivity |
|--------|--|-------------------------------------|---|--|---|---|---|-----------------|
| 0 | Not applicable | | None | | None | | None | GM, MM, OAK, CW |
| 1 | Inadequate to achieve conservation goals | CW, OAK | Ad hoc management for individual uses within the BR unit | GM, CW, GSM, OAK, MM, TG, SA | Ad hoc cooperation with immediate neighbors | TG, GM, MM | Limited effort within designated BR unit | |
| 2 | Adequate to achieve conservation goals for a few ecosystems/taxa | GM, MM, TG | Multiple uses within the context of a management plan for the BR unit | | Established regional partnerships for particular activities and functions | OAK, GSM, CW | Ad hoc cooperation and management with adjacent areas on key issues | TG, GSM |
| 3 | Adequate to achieve conservation goals for many ecosystems/taxa | GSM, SA | Multiple uses within the context of a regional cooperation plan | | Cooperative area defined by specific BR program activities, boundaries not delineated | | Cooperative regional plan for selected ecosystems/ taxa (e.g. riparian areas) | SA |

| | | | | | | | | |
|---|--|--|---|--|--|----|--|--|
| 4 | Adequate to achieve conservation goals for most ecosystems/taxa & is part of an integrated regional BR program | | Part of an integrated regional program for achieving BR goals for sustainable use | | Part of an integrated regional program for effectively achieving BR goals of cooperative area and recognized by stakeholders, with boundaries delineated | SA | Important areas for conservation and are linked through stakeholder cooperation in an integrated regional program for effectively achieving BR goals | |
|---|--|--|---|--|--|----|--|--|

Biosphere Reserve: Southern Appalachian (SA)

Rating 3.60

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Local Participation

| Rating | | access to scientific information, management experience and technologies | sustainable economic uses benefiting local communities (e.g., tourism/recreation) | employment | traditional and cultural uses and values | developing and implementing BR roles |
|--------|--|--|---|------------|--|--------------------------------------|
| 0 | None | | OAK | OAK, CW | OAK, CW, MM, TG, GM | |
| 1 | Limited ad hoc participation | GM, TG, MM, OAK | CW, MM, GSM, GM, TG | MM, TG, GM | | CW, OAK, MM, TG, GM |
| 2 | Participation focused on particular site | | | GSM, SA | GSM | GSM |
| 3 | Regular consultation and participation in addressing regional cultural, economic, and environmental issues | GSM, CW | | | | |
| 4 | Organized participation through local governments, organizations, and citizens in regional BR program | SA | SA | | SA | SA |

Biosphere Reserve: Southern Appalachian (SA)

Rating 4.00

Sites: Coweeta Hydrologic Laboratory (CW), Grandfather Mountain (GM), Great Smoky Mountains National Park (GSM), Mount Mitchell State Park (MM), Oak Ridge National Environmental Research Park (OAK), and Tennessee Gorge (TG)

Regional Partnerships

| Rating | Regional Partnerships | Indicate BR status in appropriate box |
|--------|---|---------------------------------------|
| 0 | None | |
| 1 | Partnerships focus on site management | |
| 2 | Some partnerships between site and other individual stakeholders on regional issues | CW, GM, TG, OAK, MM |
| 3 | Broad partnerships involving multiple stakeholders to address regional issues | GSM |
| 4 | Regional MAB Cooperative established to integrate BR roles | SA |

International Cooperation

Rating 4.00

| Rating | International Cooperation | Indicate BR status in appropriate box |
|--------|--|---------------------------------------|
| 0 | None | TG |
| 1 | Ad hoc contacts and information exchange | GM, MM |
| 2 | Occasional international professional exchanges on topics of mutual interest | OAK |
| 3 | Ongoing cooperation with another international entity or site | CW, GSM |

| | | |
|---|---|----|
| 4 | Ongoing, organized cooperative program involving other biosphere reserves | SA |
|---|---|----|

| Function | Inventory and Monitoring | Research and Assessment | Education and Outreach | Communication (Part 1) | Communication (Part 2) | Management and Infrastructure | Spatial Design | Local Participation | Regional Partnerships | International Cooperation | Composite Rating for Southern Appalachian (SA) BR |
|----------|--------------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------------|----------------|---------------------|-----------------------|---------------------------|---|
| Rating | 3.25 | 3.60 | 3.20 | 4 | 4 | 3.00 | 2.75 | 3.60 | 4.00 | 4.00 | |

Inventory and Monitoring

| Rating | Inventory of Biological Diversity | Ecosystems | Species | Environmental Monitoring | National Monitoring criteria ² |
|--------|---|------------|---------|---|---|
| 0 | No information or activity | | | No activity | |
| 1 | Very limited inventory, records of variable quality | | | Limited monitoring of selected core parameters | |
| 2 | Complete for some categories/taxa, records of variable quality | | | Majority of core parameters being addressed | |
| 3 | Current complete high quality information for some categories/taxa | | | Appears to meet environmental index site requirements | |
| 4 | Current comprehensive high quality information for most categories/taxa | | | Meets requirements for one or more environmental index sites plus is involved in additional monitoring activities | |

² A Framework for Monitoring the Nation's Natural Resources, Environmental Monitoring Team, Committee on the Environment and Natural Resources, National Science and Technology Council