

GAP Status Code Assignment

Assumptions, Criteria, and Methods

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The following information is provided to describe GAP Status Code assignment following methods for categorical assignment by designation type or unit level (protected areas by name) classification (including management plan review, land manager interview, or local knowledge as resources allow (Prior-Magee et al. 1998, Scott et al. 1993).

The U.S. Geological Survey (USGS) Gap Analysis Project (GAP) transfers locally assigned or reviewed GAP Status Codes between PAD-US updates (see PAD-US fields GAP Code Source and GAP Code Date for references). A categorical assignment based upon Designation Type (for example, Wilderness, National Monument, or State Wildlife Area) for terrestrial areas is assigned by USGS GAP when no other information is available (see GAP Code Source = GAP – Default). The National Oceanic and Atmospheric Administrations (NOAA) applies the globally relevant conservation measure, [IUCN Category](#), to Marine Protected Areas. NOAA and USGS GAP collaborated to develop a crosswalk to GAP Status Code for PAD-US integration (see PAD-US Online Data Manual, Tables 12 and 13: <https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/pad-us-data-manual>). Many federal and state agencies and national nonprofit partners have reviewed the terrestrial categorical assignment crosswalk, additional feedback is always welcome. As categorical assignments generally reflect the least conservation value relevant for a Designation Type across the nation, it is likely they underestimate management intent to protect biodiversity.

GAP Status Code is a measure of management intent to conserve biodiversity as defined below. This measure, a necessary analysis input utilized by USGS to achieve its [gap analysis mission](#), facilitates biodiversity assessments (that is GAP Status Codes 1 and 2) for the nation. The GAP Status Code 3 may also be useful for multiple use management assessments, including resource extraction, across the landscape.

GAP Status Code Definitions

Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management.

Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of

existing natural communities, including suppression of natural disturbance (for example, wildland fire or native insect outbreaks).

Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type (for example, logging, OHV recreation) or localized intense type (for example, mining). It also confers protection to federally listed endangered and threatened species throughout the area.

Status 4: There are no known public or private institutional mandates or legally recognized easements or deed restrictions held by the managing entity to prevent conversion of natural habitat types to anthropogenic habitat types. The area generally allows conversion to unnatural land cover throughout or management intent is unknown.

Assumptions and Criteria

The following are some criteria and assumptions used by USGS GAP to determine biodiversity management status for individual land units:

Permanence of protection from conversion of natural land cover to unnatural (human-induced barren, cultivated exotic-dominated, or arrested early succession). The assumption is that retention of natural land cover is of prime importance to maintaining biodiversity. We define "natural land cover" simplistically as areas not maintained in an unnatural state (defined above) by human activities, as visible from remote sensing or revealed through management documents, land manager or local conservation practitioner interview. That is, past alterations may be evident, but ongoing alteration is not evident or intended. Management to support biodiversity is permitted (see Type of management below).

Relative amount of the land unit managed for natural cover. The assumption is that the majority of a land unit must be maintained in a natural state for the reasons stated in the above criterion. We arbitrarily set 5 percent as the maximum amount of a land unit that can be managed in an unnatural state (as defined in the above criterion) for it to be considered "natural" for a Status 1 Code. All other status codes allow human disturbance to varying degrees. We do not currently attempt to measure actual conversion of land cover in a land unit and rely instead on legislation or management documents. Anthropogenic land cover <5 percent within a land unit otherwise managed for biodiversity can be considered an "inclusion" that has an effect but does not dictate the management status. For example, Yellowstone National Park includes a hotel and remains Status Code 1.

Inclusiveness of the management, that is, single feature or species versus all biota. The assumption is that a land unit managed to retain all of its elements will maintain biodiversity better than a land unit managed only for a single species (oftentimes at the expense of other species). If management is for a "keystone" species for which

the majority of the land unit must be maintained in a natural state, we consider that to be inclusive of all elements.

Type of management (for example, suppresses or allows natural disturbance) and degree that it is mandated through legal and institutional arrangements. The assumptions are that management that allows or mimics natural disturbance regimes, such as fire, will maintain biodiversity better than land units that suppress disturbance.

GAP Status Code Categorization

A dichotomous key to consistently rank the biodiversity management intent for each protected area is provided below (Table A, Figure A). The key should not be used in the same strict terms as a scientific key in that you will rarely know enough about a land unit to categorize it absolutely. It is intended to make a subjective process less so. In using the terms "permanent" and "legally enforceable" we recognize that all conditions are subject to change, even in wilderness and national parks, but the intent is for the condition to be of very long term.

Table A. Dichotomous key for GAP Status Code assignment

- A-1: If the management intent can be determined through agency or institutional documentation GO TO A-2, if not, GO TO A-5
- A-2: If the land unit is subject to statutory or legally enforceable protection from conversion to anthropogenic use of all or selected biological features by state or federal legislation, regulation, private deed restriction, or conservation easement intended for permanent status, GO TO B-1; if not, GO TO A-3
- A-3: If ecological protection is not legally enforceable, temporary, or lacking but managed by a plan intended for permanent status, GO TO A-4; if not, GO TO A-5
- A-4: Management to benefit biological diversity is provided by a written plan in place or in process under an institutional policy requiring such management - **Status 3**
- A-5: Not subject to an adopted management plan or regulation that promotes biological diversity, or management intent is unknown - **Status 4**
- B-1: If the total system in the land unit is conserved for natural ecological function with no more than 5 percent of the land unit in anthropogenic use, GO TO B-4; if conservation provisions apply only to selected features or species, GO TO B-2
- B-2: If management emphasizes natural processes including allowing or mimicking natural ecological disturbance events, but also allows low anthropogenic disturbance, renewable resource use, or high levels of human visitation on more than 5 percent of the land unit - **Status 2**; if not, GO TO B-3
- B-3: Management allows intensive, anthropogenic disturbance such as resource extraction, military exercises, or developed or motorized recreation on more than 5 percent of the land unit, but includes ecological management for select features - **Status 3**
- B-4: If management strives for natural processes including allowing or mimicking natural ecological disturbance events - **Status 1**; if not, GO TO B-5
- B-5: Managed for natural processes, but some or all disturbance events are suppressed or modified - **Status 2**

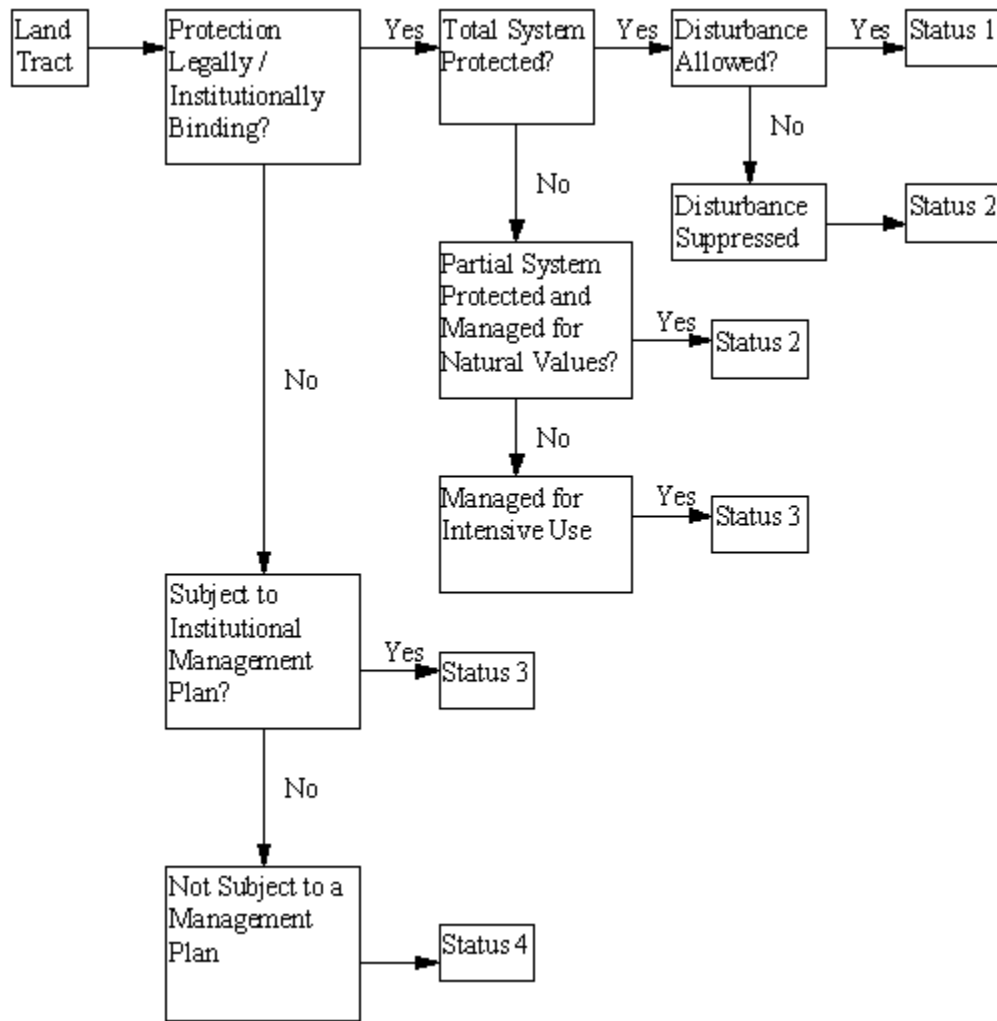


Figure A. The dichotomous key in graphic flow-chart format.

References

Julie S. Prior-Magee, Bruce C. Thompson & David Daniel (1998) Evaluating Consistency of Categorizing Biodiversity Management Status Relative to Land Stewardship in the Gap Analysis Program, *Journal of Environmental Planning and Management*, 41:2, 209-216, DOI: 10.1080/09640569811713

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