Oregon Status Factors

Elcode   NFSM000079

Gname   GOMPHUS BONARII

Gcomname

Number of Occurrences

B = 6 - 20

Comments   There are 9 verified occurrences of Gomphus bonari in Oregon represented by 11 collections. Continuing fungal surveys may uncover more sites. (Dreisbach et al. 2002, ISMS 2002)

Number of Occurrences with Good Viability

B = Very few (1-3) occurrences with good viability
C = Few (4-12) occurrences with good viability

Comments   2-7 (ISMS-ONH 2002) occurrences are believed extant and presumed viable (Norvell 2002 pers comm.)

Population Size

U = Unknown

Comments   Records reflect only species occurrence, i.e. fruitbodies, not numbers of individuals. Genets of ectomycorrhizal fungi cannot be delimited without DNA sampling.

Range Extent

F = 20,000-200,000 km2 (about 8,000-80,000 square miles)

Comments   In Oregon, Gomphus bonarii ranges from the Mt. Hood National Forest in Marion County south to the California border in the Cascade range. It extends to the western extreme of the Cascade West region . (Dreisbach et al 2002; ISMS Database 2002 and GIS map for Gomphus bonarii).

Area of Occupancy

U = Unknown

LU = Unknown

Comments   Area of occupancy can only be roughly approximated from fungal fruitbodies as the vegetative organism is hidden from site within the substrate; its distribution is spotty and it appears restricted to fairly complex habitats. Gomphus bonarii has unknown biological and ecological requirements that determine how and when symbiotic associations are formed with partners.

Long-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

U = Unknown. Long-term trend in population, range, area occupied, or number or condition of occurrences unknown

Comments   Gomphus bonarii is an ectomycorrhizal fungus dependent upon the health of its symbiotic partners (Abies, Tsuga, and other conifers) for its existence. It has a spotty distribution in western North America, but most occurrences appear collected from late-successional/old-growth forests. Individuals are less dependent upon spore dispersal than upon mycelial interactions with other

individuals and their mycorrhizal partners. Longevity of individuals is unknown; populations are inferred as relatively long-lived (Norvell pers comm 2002). Current populations are inferred as relatively stable. (Norvell 2002 pers comm).

Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

D = Declining. Decline of 10-30% in population, range, area occupied, and/or number or condition of occurrences
E = Stable.   Population, range, area occupied, and/or number or condition of occurrences unchanged or remaining within ±10% fluctuation

Comments   Gomphus bonarii is an ectomycorrhizal fungus dependent upon the health of its coniferous symbiotic partners and is commonly found in late-successional/old-growth forest habitats. Natural catastrophes or human activities that imperil the health of Abies and other associated conifers will compromise both tree and fungus. Current occurrences of Gomphus bonarii in Oregon are uncommon. ~2-7 occur in currently protected reserves in the northern spotted owl region of the Pacific Northwest. The species is inferred to be relatively secure to possibly declining over the short-term (Norvell 2002, Dreisbach et al 2002).

Threats

D = Moderate, non-imminent threat. Threat is moderate to severe but not imminent for a significant portion of the population, occurrences, or area.

   Scope   Moderate   Severity   Moderate   Immediacy   Low

Comments   Gomphus bonarii is commonly found in coniferous forests, where it is associated with Abies and other conifers in late-successional/old-growth forests. Whatever threatens its habitat and symbiotic partners will threaten Gomphus bonarii. All populations are at risk to incidental catastrophic event, (such as hot fires that might extirpate the community) and unmonitored human interference. Unprotected populations are at risk to road construction or other development, and heavy logging (i.e. clean/or clearcutting or heavy thinning).

Number of Appropriately Protected and Managed Occurrences

B = Few (1-3) occurrences appropriately protected and managed
C = Several (4-12) occurrences appropriately protected and managed

Comments   ISMS-ONH (2002) cites 2-7 occurrences in protected areas: 1 in late-successional reserves and 1-6 either in riparian reserves or in the unprotected matrix. If late-successional and/or riparian reserves are opened to clearcutting, road construction, or other development, the number of protected and managed occurrences could decrease dramatically to 0. It should be noted that some to many sites in temporary reserves may not be managed appropriately at the present time.

Intrinsic Vulnerability

B = Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance over a period of several years (on the order of 5-20 years or 2-5 generations); or species has moderate dispersal capability such that extirpated populations generally become reestablished through natural recolonization (unaided by humans). Ecological community occurrences may be susceptible to changes in composition and structure but tend to recover through natural processes given reasonable time (10-100 years).

Comments   Ectomycorrhizal fungal health is linked to that of the symbiotic partner (here Abies spp. and other conifers). Preference for late-successional/old-growth forests is inferred but not statistically demonstrated from the data (Dreisbach et al 2002). Gomphus bonarii is thus inferred as long-lived, slow-growing (Norvell), and vulnerable to anything that threatens the forest habitat, including drought, insect infestations, hot fires, road construction development, and clearcutting.

Environmental Specificity

B = Narrow. Specialist or community with key requirements common.

Comments Gomphus bonarii is preferentially found in complex late-successional/old-growth coniferous forests where it forms symbiotic partnerships with Abies and other conifers. Its precise biological and ecological requirements are unknown. It is found only in western North America, and fruits in clusters and arcs usually in the autumn but sometimes in the spring (Petersen 1971).

Other Considerations

ORNHIC - List 3. Cantharellus bonarii Morse (1930. Mycologia 22:219) is a synonym. Petersen (1971) named several varieties; no attempt has been made to differentiate the species according to varieities in this evaluation (Norvell pers comm 2002).

Edition 11/23/2002   **Edauthor** Lorelei L Norvell

Grank S2?   **Grank Date** 11/23/2002

Greasons

In Oregon Gomphus bonarii ranges from the Mt Hood National Forest in Marion County south to the California border in the Cascade range. Gomphus bonarii is an ectomycorrhizal fungus dependent upon the health of its symbiotic partner (Abies and other conifers). Gomphus bonarii is uncommon to rare in Oregon, which has 9 extant occurrences: 2-7 lie in currently protected forest reserves, but none in permanently protected areas. Its unknown biology precludes estimation of population size and area of occupancy. Extant populations are presumed stable or declining over the short-term but no predictions are made regarding long-term trends. Unprotected occurrences will be threatened by road construction and development and clearcutting or heavy thinning. All occurrences are imperiled by hot fires and other incidental catastrophic events.

BCD Sources

New Sources

Petersen. 1971. The genera Gomphus and Gloeocantharellus in North America. Nova Hedwigia 2: 33-45. (for GOBO2) ALSO Thiers. 1985. Agaricales of California: 2. Cantharellaceae. Mad River Press. ALSO Dreisbach, Mueller, Exeter, McFarland, Cushman. 2002 Survey and Manage Step 2 Worksheet on GOBO2. ALSO ISMS-ONH. 2002. ISMS data; ONH protection extrapolations; GIS map for GOBO2.