

StWen
1992

Supplement to

BULLETIN OF THE

ecological society

OF AMERICA

JUNE 1992

Volume 73, No. 2

Program and Abstracts

77th Annual ESA Meeting

Sheraton Waikiki Hotel

Honolulu, Hawaii

August 9-13, 1992

1996

of decreased water
not be combined (as
balances
ply and water demand.
at the distribution
slopes should most
as vegetation on
n rainshadows. I
predictions, and
distribution of
ocal water balances

We fertilized plots of *Borrichia frutescens* (L.) de Candolle and increased rates of galling by a cecidomyiid fly. Individual galls were bigger than those on control plots. Rates of parasitism of galls were not different on galls in fertilized or control plots. We bagged individual galls, to prevent attack by parasitoids, and removed bags sequentially to examine timing of attack by parasitoids. All parasitoids attacked galls when the gall was small. Large galls appear to be no defense against parasitoids in this system because parasitoids attack galls in their early stages. Fly pupae weighed more in larger galls and resultant flies had more eggs. This may be why fertilized *Borrichia* plants are preferred over control plants by these flies.

on, Arlington, TX, USA.

STIVEN, ALAN E. University of North Carolina, Chapel Hill, NC 27599, USA. Ecological and genetic analysis of freshwater mussel populations; issues of decline and endangered status.

r composition of algae.
th rate. The green alga
limitation at six different
different foods were then
he rate of change of dry
oved to alter *Daphnia*
gh growth rate. Dramatic
rements of biochemical
ality algal foods. Mineral
s such as these suggest
sent, but also on its rate

The ecological health of freshwater mussels can be an indicator of the condition of its river system. Some of North Carolina's formerly abundant freshwater mussel fauna have become quite rare, and some are on the verge of extinction. This fauna, however, is notorious for its often disputed systematics, derived largely from conchological differences. A example depicting these issues occurs in *Lampsilis radiata* which has 2 formalized subspecies (*conspicua* and *radiata*). The former is endemic to North Carolina, both are now quite rare, and one was slated for endangered status. While they differed in sample mean unadjusted conchology measures, covariance analyses indicated homogeneity of shell length-height regression coefficients, and no difference in adjusted mean lengths. A similar conchological comparison of these "subspecies" with a supposedly distinct and abundant species (*L. fullerkaei*) from Lake Waccamaw also did not find distinguishing conchologies. Genetic identity measures derived from electrophoretic work on 12 loci also failed to distinguish between the *L. radiata* "subspecies" and between the "subspecies" and *L. fullerkaei* (Nei's unbiased identity = 0.945-0.978). These findings, along with evidence of common site effects in other *Lampsilis* species, suggest that an endangered status for any member of this *Lampsilis* group may be premature.

Old Dominion University,
quence of barrier island

STOHLGREN, THOMAS, J. Cooperative National Parks Resources Studies Unit, University of California, Davis, CA, 95616, USA. Evaluating bald eagle winter roost characteristics: a landscape and gradient approach.

on (dune vs. swale) along
TER site. A sequential
la *breviligulata*, *Spartina*
ina patens and the older
it excavation study, were
biomass than the swales.
ated swales. More coarse
extent of flooding in the

We: (1) surveyed bald eagle (*Haliaeetus leucocephalus*) winter roost habitat (clustered-systematic sampling design; n = 208 plots) in the Caldwell Butte area of Lava Beds National Monument, California; (2) completed a 100% inventory of previously-used roost trees in the 2.5 km² study area; and (3) quantified the size and age structure of ponderosa pine (*Pinus ponderosa*) along a habitat gradient to more precisely define primary, secondary, and potential eagle roost habitat. A sharp gradient of eagle use and tree age structure existed in previously identified primary and secondary roost habitat. Forest plots (n = 11) centered on randomly selected roost trees in the high basal area forest (< 18 m²/ha of ponderosa pine) had significantly greater past eagle use (136.4 ± 39.7 castings/ha; mean ± 1 SE) and older maximum-diameter trees (330 ± 35 years old) than adjacent high basal area forest plots (1.8 ± 1.2 castings/ha; largest trees 180 ± 40 years old) whose locations were randomly selected.

and Ecosystems
, Christchurch
growth beech

STONE, CHARLES P., DAVID FOOTE, and LINDA W. CUDDIHY. Hawaii Volcanoes National Park, Box 52, Hawaii National Park, HI 96718, USA. Monitoring native and alien species in Hawaii: strategies and importance in conservation.

ebriis were
h *Nothofagus*
uences were
ay INDicator
al character-
m³ per ha)
from heartwood
forests.

Alien or introduced plants and animals in Hawaii are managed to: detect importance in disrupting native communities, determine success of control programs in reducing or removing target species, evaluate recovery of native species after control, and detect incipient invasions of aggressive aliens. Monitoring of birds is accomplished with audio counts, and mist netting is being used to study population structure and disease. Monitoring of rare plants emphasizes changes with and without protection from ungulates, and plant population structure is determined for some species. Monitoring of invertebrates through host plant relationships and biological diversity of indicator groups is being considered. The frequency and

ity of South
fect on rate