ABSTRACTS OF PAPERS GIVEN AT MEETINGS

ABSTRACTS OF SHOREBIRD PAPERS AT THE 1982 ANNUAL MEETING OF THE COOPER ORNITHOLOGICAL SOCIETY, LOGAN, UTAH, 22-25 APRIL 1982

Foraging in a migratory bird - generalist or facultative specialist - a look at Whimbrel

by Elizabeth P. Mallory, Department of Biology, Kenyon College, Gambier, OH, USA.

Migratory birds use at least several different environments under somewhat unpredictable conditions during the course of their annual migratory movements. Selection on migratory birds may favor generalist foragers more than specialist foragers because generalists can more easily cope with a variety of food resources in the different habitats. But, there are potentially conflicting forces selecting for specialists in each habitat used. If food types are predictable in each habitat, then migrants may evolve the ability to switch specializations, i.e. to be "facultative specialists" rather than opportunists. I describe changes in Whimbrel niche breadth as measured by behavior among their breeding, migratory and wintering habitats and compare them to data published for other species. I analyze change in diet and competition, which affect niche breadth among the habitats. I suggest that Whimbrels are "facultative specialists" and not generalists. I argue that niche breadth is not simply a product of competition and that food resources characteristics can have major effects on foraging niche breadth.

Do shorebirds depress their prey?

by J.P.Myers, G.R.Ruiz, J.R.Walters, and F.A.Pitelka, Museum of Vertebrate Zoology and Bodega Marine Laboratory, University of California, Berkeley CA 94720, USA.

Theories on the role of competition in community structure often assume that foraging has a cumulative impact on prey availability. We tested this assumption for shorebirds wintering at Bodega Bay, California. Shorebirds were excluded from intertidal sandflat plots for 6 months using exclosures that permitted subtidal predators to forage while keeping out shorebirds. We measured prey availability rather than simply prey abundance by combining field estimates of prey density, prey depth, prey size, prey handling time, and substrate penetrability in a computer model derived from laboratory experiments. Caloric availability of prey was reduced by 41% on control plots compared to exclosures. These results indicate that the cumulative impact of shorebird foraging in the nonbreeding season has a strong effect on invertebrate populations and on shorebird foraging rates. In this community the potential for food-based competition remains strong.

ABSTRACTS OF SHOREBIRD PAPERS AT THE 1982 ANNUAL MEETING OF THE PACIFIC SEABIRD GROUP, SEATTLE, WASHINGTON, 6-9 JANUARY 1982

Phalarope feeding in relation to autumn upwelling features off California

by Kenneth T. Briggs, Kethleen F. Dettman, David B. Lewis, and W. Breck Tyler, Center for Coastal Marine Studies, University of California, Santa Cruz, CA 95064, USA.

A joint ship-aircraft-satellite study was undertaken to examine phalarope feeding in relation to the physical processes and biology of upwelling features off central and northern California. Phalarope distribution and abundance were assessed via aerial survey while the hydrographic characteristics of a large central California upwelling system were measured from shipboard. Phalarope diet was determined from 58 specimens collected at the same time as zooplankton abundance and chlorophyll concentrations were examined.

Phalaropes were most numerous in strong surface thermal and chlorophyll gradients bordering upwelling masses. They fed primarily on euphausiids and copepods, taking whichever taxon was more abundant. Other crustaceans were of lesser importance; plastic particles were commonly ingested. The surface net plankton was dominated by salps and ctenophores, though phalarope prey predominated at stations near the shelf break off Monterey Bay and at a weak convergence near Guide Seamount.

The annual cycle of shorebirds at Grays Harbor, Washington

by Dennis Paulson, Burke Museum, University of Washington, Seattle, WA 98195, USA.

Censuses of shorebirds were taken on the north side of Grays Harbor, Washington, at intervals over a period of nine years. From these censuses an overall picture of seasonality can be painted for 25 of the 37 species recorded. Spring migration occurs as a narrow pulse of about a month's duration, with very large daily counts for Western Sandpipers, Dunlins, and Short-billed Dowitchers. Up to 500,000 birds use the area at one time in late April, the largest concentration of shorebirds on the Pacific coast south of the Copper River Delta in Alaska. Fall migrations occurs over a much longer period, taking about four months for all species to move through the area. Because of this, many species appear to be more abundant in spring than in fall, their entire populations appearing almost simultaneously. Other species have higher daily counts in fall, most of them species in which only juveniles regularly migrate through the area. A surprising early and substantial fall movement of Western Sandpipers, Short-billed Dowitchers, and Whimbrels must be composed of birds that bred unsuccessfully and/or deserted their mates at hatching, and moved south extremely rapidly.