

Atlas of the Breeding Birds of Nevada

WITH FOREWORDS BY
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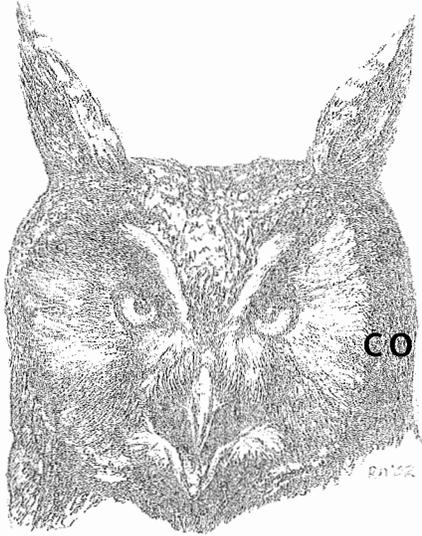
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Frontispiece: Illustration of Black-throated Sparrow copyright © 2004 by
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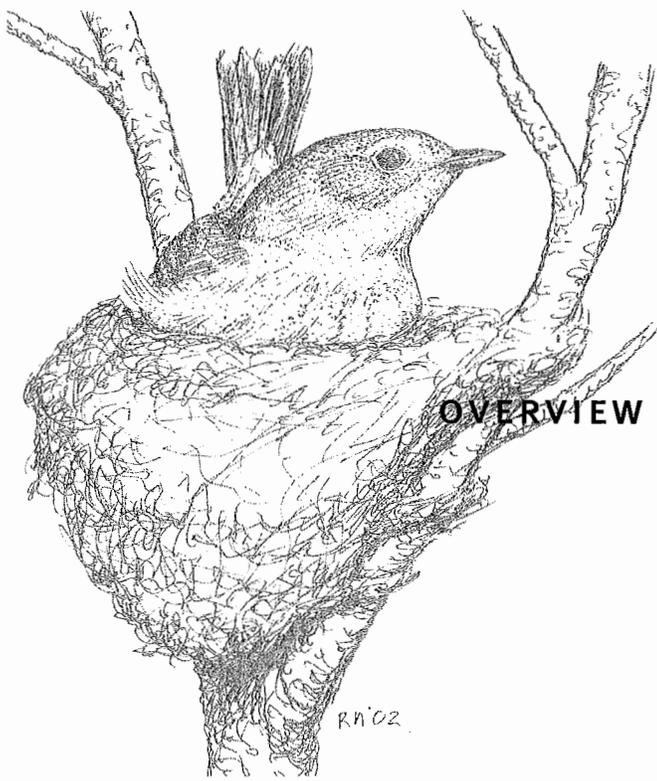
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OVERVIEW OF THE RESULTS

If there is one thing Nevada's birders agree on, it is that most of the published range maps currently available are woefully inadequate in their portrayal of the distribution and abundance of the state's birds. The inexactitude of maps is to some extent inevitable, of course; most field guides simply cannot show more than the broad outline of a species' range. In Nevada, the extremes of geography make the consequences of these simplifications seem especially acute, because large swaths of inappropriate habitat are often marked as occupied, and areas of suitable habitat are unrecognized because they are poorly known. The paucity of published information on Nevada's birds and their habitats means that some maps are just wrong, even in their portrayal of range boundaries.

The *Atlas of the Breeding Birds of Nevada* presents up-to-date and thorough distribution data on all of the bird species that breed in Nevada. The authors of earlier books on Nevada's birds were often forced to estimate or guess at range limits. There was a surprising degree of uncertainty about the ranges of even many widely distributed and common species before the atlas fieldwork began: How far south do Brewer's Sparrows breed? What is the northern range limit of the Verdin? How extensive is the range of the Northern Shoveler? In other cases there was virtually no information on a species' basic status and distribution in Nevada. This was true both for species with rather limited ranges, such as the Gilded Flicker and the Bobolink, and for fairly widespread species with disjunct breeding ranges in the state, such as all three of the nuthatches. The atlas results provide new occurrence records for these and many other species, and the predictive maps often suggest areas for additional fieldwork and discovery.

The main results of the atlas are chronicled in the species accounts that form the bulk of this volume. This chapter provides

an overview of the data collected during the atlas project and a summary of the general patterns that emerged from the study.

THE ATLAS YEARS: 1997–2000

It is always tempting to look at the range maps in a breeding bird atlas and think of them as the "last word" on the status and distribution of the breeding avifauna of a particular region. It is more appropriate, though, to view atlas range maps as a snapshot from the finite period of time during which the fieldwork was completed. Ten years from now, the breeding ranges of Anna's Hummingbird and the Great-tailed Grackle will probably differ from those shown in this book. It is difficult even to imagine Nevada's avifauna a hundred years from now: Ferruginous Hawks, Calliope Hummingbirds, and Abert's Towhees could be replaced by California Condors, Barred Owls, and Northern Cardinals!

Even without significant large-scale and long-term environmental changes (such as sagebrush loss and degradation or global climate change), *any* four-year period is distinctive, unique, and irreproducible. Consider the period 1997–2000: it started out with wetter years than normal and finished up with drier years than average. One major consequence of this rapid transition from wet to dry was the creation of a high potential fuel load in the form of above-average rangeland productivity in the mid-1990s, which led to spectacular burns during the fire seasons of 1999 and 2000. Many habitats that atlas workers visited in 1997 and 1998 were almost completely burned in 1999 and 2000. Users of the atlas data should therefore be aware that local occurrences of sagebrush species such as Greater Sage-Grouse and Brewer's Sparrow may be appreciably different in the first decade of the twenty-first century than they were during the last four years of the twentieth.

In some cases, such as the example of the burned areas cited above, the explanation for local presence or absence of birds is fairly evident. In other cases, there is no obvious explanation for patterns observed during the atlas years. For example, longtime birders were surprised not to encounter Painted Redstarts during the atlas project. In years past, the species was recorded during summer in the mountains of southern Nevada; and it may one day be found breeding in the state. But not one of the atlas workers saw a Painted Redstart during the atlas years. Other species that may well be part of the breeding avifauna of Nevada were not confirmed as breeders during the atlas project; examples include Spotted Owl, Vaux's Swift, Hermit Warbler, Grasshopper Sparrow, and Gray-crowned Rosy-Finch. Conversely, atlas workers found unexpected birds whose occurrences may turn out to be mere anomalies in the long term; possible examples include Pileated Woodpecker, Gilded Flicker, and Rufous-crowned Sparrow.

BLOCK COVERAGE

Of the 771 atlas blocks initially selected, 71 were found to be inaccessible due to restricted access or impassibility and had to be replaced (see pp. 16–17 for a description of block selection methods). By the end of the final field season, fieldworkers had visited 769 atlas blocks. An additional 78 blocks in Clark County were visited by a special field team in 2000. Data from these 78 blocks are being used to test the accuracy of the predictive models created from the main atlas data set, and records from these blocks are shown on the atlas range maps as incidental observations.

At least 418 people contributed to the data gathered during the atlas project. Over the course of the study, these individuals spent more than 8,500 hours surveying blocks, for a total of more than 14,600 observer-hours. Fieldworkers spent at least 5,200 hours traveling more than 155,000 miles (ca. 250,000 km) to distant field sites. Table 2 breaks down these figures for each year of the project.

Other atlas projects have assessed how adequately individual blocks were covered by determining how closely the species lists from each block approach some expected number of species or by examining the proportion of all species for which breeding was confirmed. Such assessments are inherently subjective and require considerable prior knowledge. Identifying the number of expected species in any of our blocks in any objective way was deemed very difficult, and we felt it would have presupposed

knowledge about the distributions we were trying to determine. With the wide variation in habitat types found in Nevada (e.g., compare a sagebrush block with no water source with one with extensive shallow wetlands), it was also clear that different standards would have had to be set for each habitat. Breeding confirmation rates also proved to be difficult to use. Setting some target confirmation rate to be met in all blocks would have assumed that a constant proportion of all species seen in a block actually bred there. Given the wide variation in bird species composition found across our blocks, this assumption did not seem reasonable. Hence, we made no attempt to assess whether blocks had achieved "adequate" coverage.

We did, however, collect data on the amount of time observers spent in each block (see map on facing page). Since individual observers varied in how intensively they searched an area, and blocks varied in how easy they were to search, these data provide only an approximate sense of how much effort was expended searching each site. Nonetheless, they do provide some insight into potential biases that might exist in the data due to the way in which different areas were surveyed.

BIRD OBSERVATIONS

Over the four years of the study, fieldworkers obtained evidence of breeding for 265 species of birds. Of these, 243 were confirmed as breeders in Nevada. After reviewing the species list and examining new information gathered since the atlas fieldwork was completed, we considered it likely that at least 257 species currently breed in Nevada.

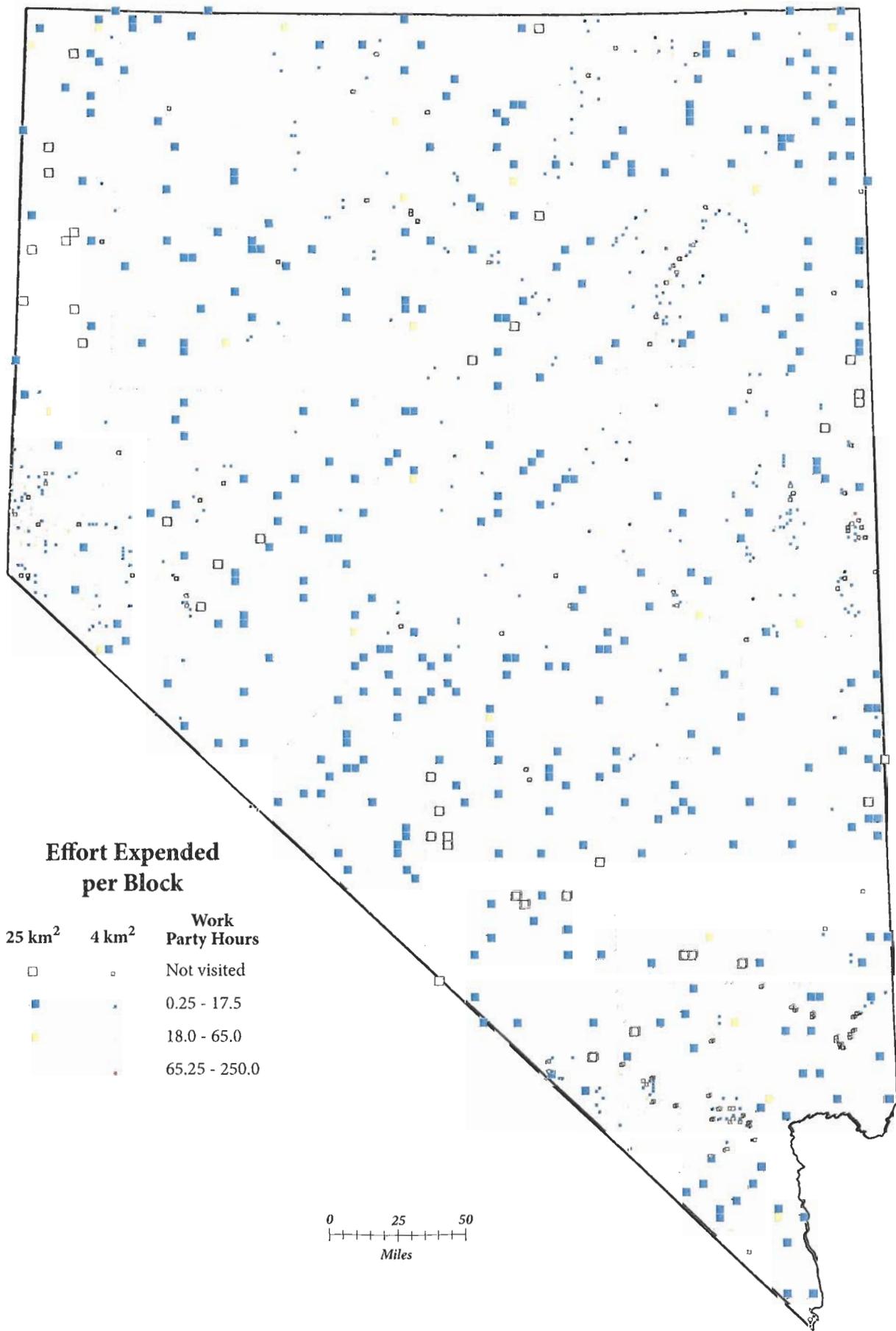
Among the most exciting finds were the Gilded Flicker and Rufous-crowned Sparrow, which were found in the extensive Joshua tree woodlands near the town of Searchlight in far southern Nevada. Atlas workers also found several Mojave bird species in a spot well north of the ecoregional boundary of the Mojave Desert, on the Nellis Air Force Range near the town of Tonopah. Cactus Wren, Ladder-backed Woodpecker, and Scott's Oriole were reported at this small island of Mojave Desert located in what are otherwise Great Basin landscapes. Other interesting discoveries included the unexpectedly widespread distributions of the Black-chinned Sparrow and Gray Vireo, which are commonly found in pinyon-juniper woodlands of the Mojave Desert. The atlas confirmed that they actually occur as far north as Lincoln and White Pine counties, well beyond the Mojave Desert's northern limits. Also, Bobolinks and Swainson's Thrushes

TABLE 2. OBSERVER EFFORT DURING THE NEVADA BREEDING BIRD ATLAS PROJECT

YEAR	NUMBER OF OBSERVERS	NUMBER OF BLOCKS VISITED	PARTY-HOURS OF FIELDWORK [†]	OBSERVER-HOURS OF FIELDWORK [†]	HOURS SPENT TRAVELING [‡]	MILES TRAVELED TO VISIT BLOCKS [‡]
1997	87	111	>1,339	>1,918	>691	>27,309
1998	117	248	>2,240	>3,794	>1,763	>37,189
1999	121	434	>2,832	>5,750	>1,733	>53,543
2000	137	266	>2,086	>3,144	>1,012	>36,870
Total	418 [†]	769 [†]	>8,497	>14,606	>5,199	>154,911

[†]The annual figures do not sum up to the total because many observers participated in the project in more than one year, and some blocks received coverage during more than one year.

[‡]These figures underestimate actual time and mileage because some observers did not report effort and many observers clearly underestimated travel time and distances.



**Effort Expended
per Block**

25 km ²	4 km ²	Work Party Hours
□	○	Not visited
■	●	0.25 - 17.5
■	●	18.0 - 65.0
■	●	65.25 - 250.0

0 25 50
Miles

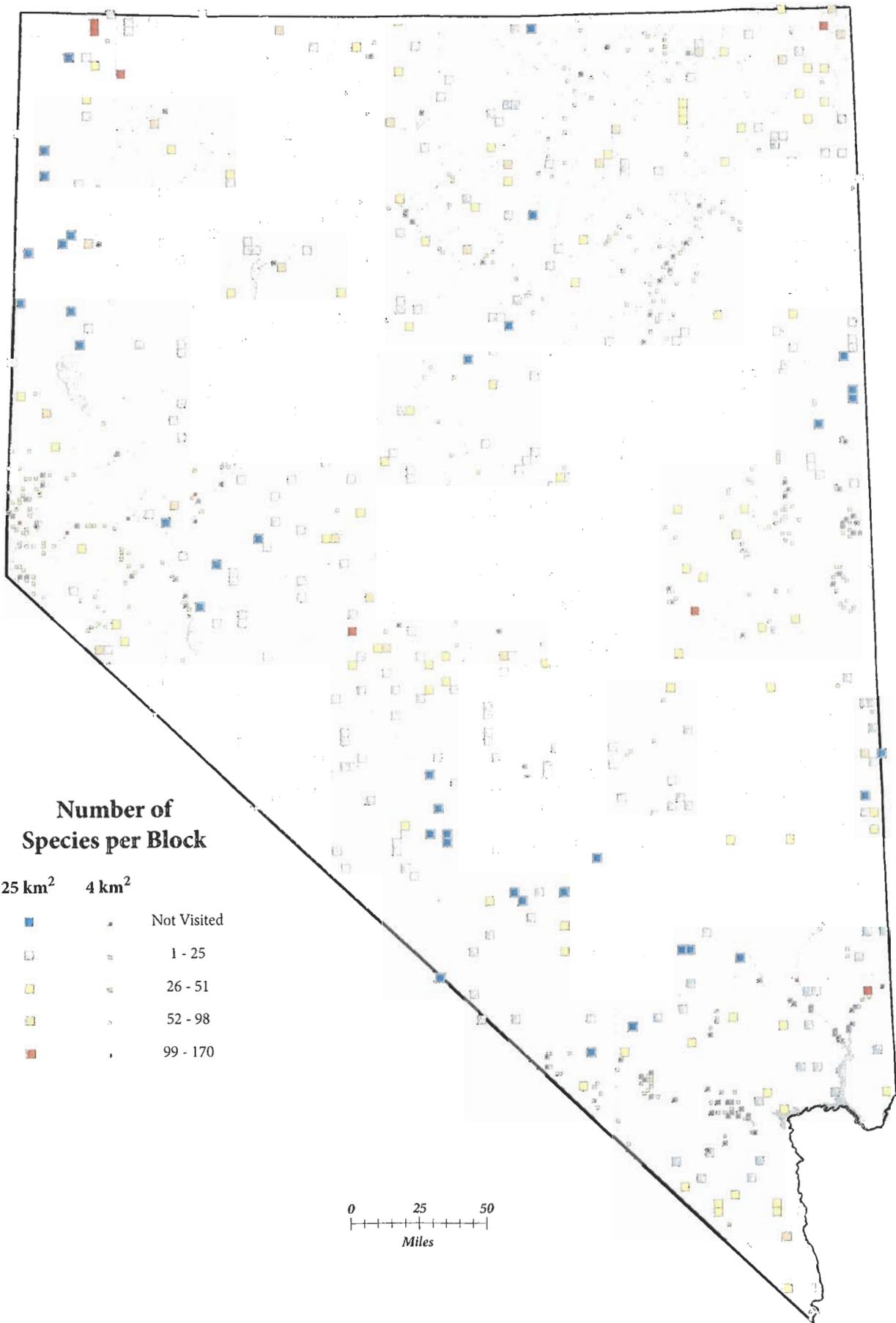


TABLE 3. THE TWENTY-FIVE MOST FREQUENTLY ENCOUNTERED SPECIES DURING THE ATLAS PROJECT

SPECIES	NUMBER OF BLOCKS IN WHICH SPECIES WAS RECORDED [†]
1. Brewer's Sparrow	577
2. Common Raven	541
3. Mourning Dove	457
4. Horned Lark	369
5. Northern Flicker	340
6. Western Meadowlark	338
7. Rock Wren	318
8. American Robin	315
9. Black-throated Sparrow	314
10. Brown-headed Cowbird	298
11. Red-tailed Hawk	296
12. American Kestrel	277
13. Sage Thrasher	269
14. Sage Sparrow	253
15. Brewer's Blackbird	247
16. Loggerhead Shrike	246
17. Spotted Towhee	235
18. Turkey Vulture	223
19. House Finch	222
20. Mountain Chickadee	215
21. Green-tailed Towhee	213
22. Chipping Sparrow	212
23. Killdeer	205
24. Common Nighthawk	200
25. Northern Harrier	191

Note: Data are from blocks only.

[†]This refers only to blocks in which possible, probable, or confirmed breeders were documented. Atlas blocks with presumed nonbreeders are excluded from the totals. For an explanation of this distinction, see pp. 18–21.

were found in more locations than expected during the atlas survey, mostly in northern Nevada.

Unfortunately, it is impossible to determine beyond a doubt *all* the species that currently breed in Nevada. The older literature generally includes little information about the breeding status of recorded birds. Some species are difficult to detect during surveys that use standard atlas methods. For example, there are historic records of Elf Owls breeding along the lower Colorado River in Nevada (Rosenberg et al. 1991), but no recent breeding has been confirmed for this species. Also, Spotted Owls breed close to the Nevada border in the Sierra Nevada, and may at least occasionally breed in Nevada as well (see p. 540–41). Additional surveys will be necessary to determine the current status of both species in Nevada.

Among the most frustrating species were several that were suspected to breed in Nevada but were either not found at all (e.g., the Northern Waterthrush in the far northern Jarbidge Range) or could not be confirmed as breeders (e.g., the Hermit Warbler in the far western Carson Range or the recently introduced Sharp-tailed Grouse in northern Nevada mountain ranges). Another species “missing” from the atlas database is the Eurasian Collared-Dove, which apparently did not colonize the state until after fieldwork was completed (see p. 540).

Table 3 lists the twenty-five species that were found in the greatest number of atlas blocks. The most frequently encountered species was the Brewer's Sparrow, which is found almost

exclusively in sagebrush-dominated habitats during the breeding season. Other sagebrush-associated species, such as Sage Thrasher and Sage Sparrow, also ranked high in encounter frequency. Mountain Chickadee and Chipping Sparrow are typical of pinyon-juniper habitats in Nevada. The high encounter frequencies of these species reflect the widespread occurrence of these two habitat types in the state of Nevada. The remainder of the list of most frequently encountered species comprises birds with a fairly generalized habitat use, such as Common Raven, Mourning Dove, and Western Meadowlark.

The Nevada atlas database contains 32,396 records; 29% of these records involved confirmed breeders, and an additional 23% involved probable breeding. It comes as no surprise that there was considerable variation in the ease with which different species could be found, and breeding confirmed. Most owls are hard enough to catch a glimpse of, let alone to see on the nest; thus, most owl records were of possible breeders. Pairs of waterfowl (presumed mates) are easy to view, and many species of ducks, geese, and swans thus had high rates of probable breeding. And species such as the Black-billed Magpie and American Robin, which build conspicuous nests and tend to their young in plain view of human observers, had very high confirmed breeding rates. The median confirmation rate, calculated across all species using only data from atlas blocks, was 27%, and ranged from 0% to 100% for individual species. Confirmation rates were typically higher for incidental observations, but this simply reflects the biases inherent in that subset of the data.

Species richness patterns across the state (see map on facing page) show many areas with relatively low richness—fewer than twenty-six species. Hotspots with ninety-nine or more species of birds occurred along river corridors, such as the Virgin, Carson, and Truckee rivers, and in a number of scattered locations throughout the central and northern parts of the state. Species richness varied greatly among habitats, with the highest richness found in wetlands, followed by ash, agricultural, and riparian habitats, and the lowest number of species found in salt desert scrub and in grasslands (Table 4).

TABLE 4. BIRD SPECIES RICHNESS AMONG HABITAT TYPES IN NEVADA BASED ON ATLAS BLOCK DATA

HABITAT TYPE	AVERAGE NUMBER OF SPECIES
Agriculture	43.4
Alpine	30.2
Ash	46.7
Grassland	14.1
Mesquite	22.0
Mojave	24.9
Montane Forest	34.9
Montane Parkland	32.8
Montane Shrubland	33.1
Pinyon-Juniper	35.7
Riparian	41.3
Sagebrush Scrub	19.8
Sagebrush Steppe	36.8
Salt Desert Scrub	13.5
Urban	29.1
Wetland	56.6

One important lesson the atlas highlights is that Nevada has a wildly diverse and dynamic landscape. Mountain ranges along the state's periphery stand out as sometimes surprising strongholds for several Nevada birds. The Carson Range in the far west, which is an extension of the northern Sierra Nevada, has many birds that are rarely, if ever, found elsewhere in the state. The far northern mountains, such as the Jarbidge, Santa Rosa, and Montana ranges, support populations of birds that are characteristic of the sagebrush steppe and other vegetation covers typical of the Columbia Plateau. The Spring Mountains and Sheep Range in southern Nevada support disjunct populations of several montane birds, some of which may prove to be taxonomically distinct

from populations found in other parts of the state. Mention of the McCullough and Virgin mountains of Clark County conjures fond memories for many atlas workers, who were treated to rare sightings of birds typically found south of Nevada.

And the bird life of central Nevada is by no means uninspiring. The Ruby Mountains and surrounding valleys have several rare species of birds; for example, the Himalayan Snowcock, which is found nowhere else in North America, and the Trumpeter Swan, which does not breed elsewhere in the state. Other ranges, such as the Toiyabe, Monitor, Snake, and Schell Creek ranges of central and eastern Nevada, are strongholds for some species of conservation concern such as the Pinyon Jay.

Survey Block Records

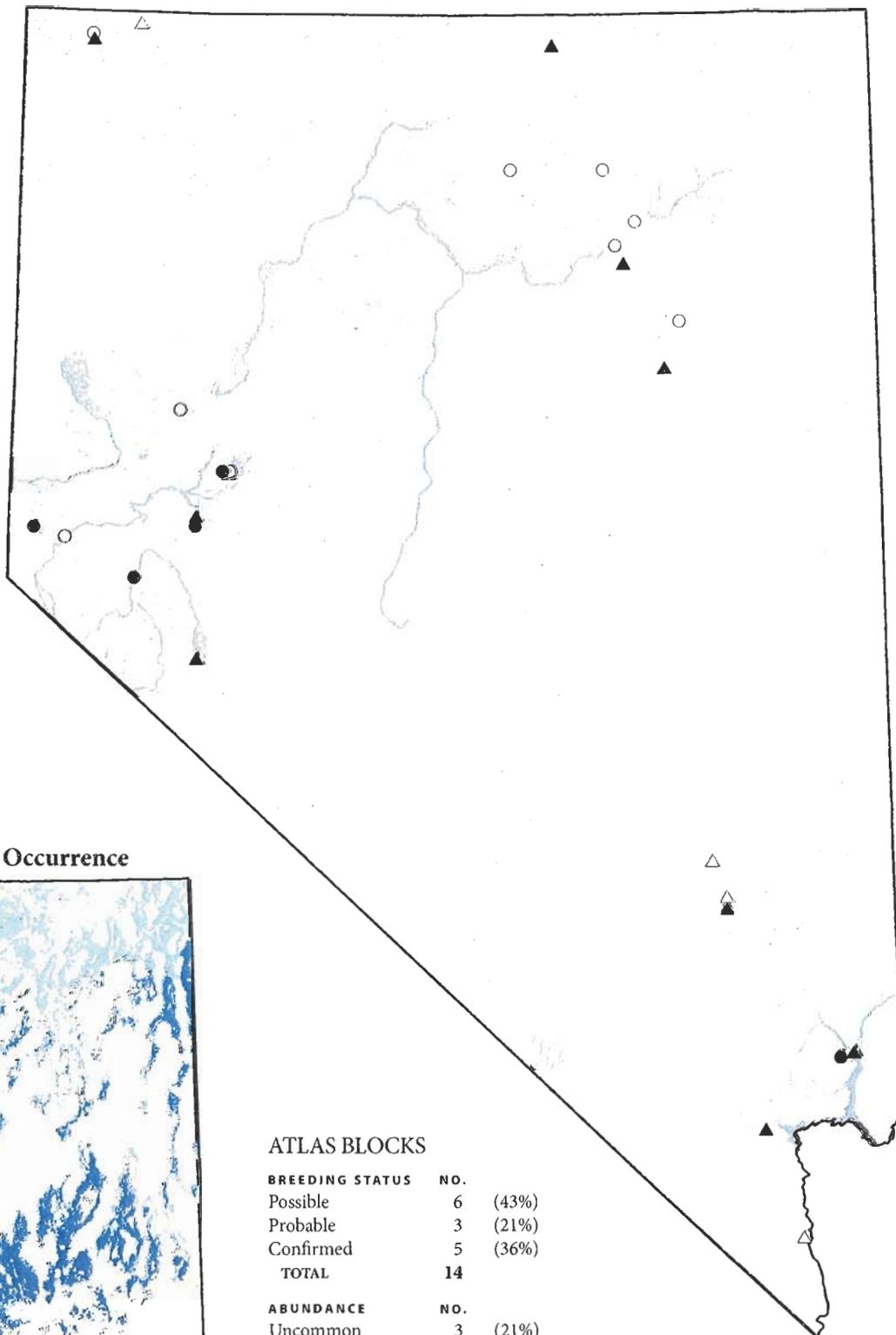
- Confirmed
- Probable
- Possible

Incidental Records

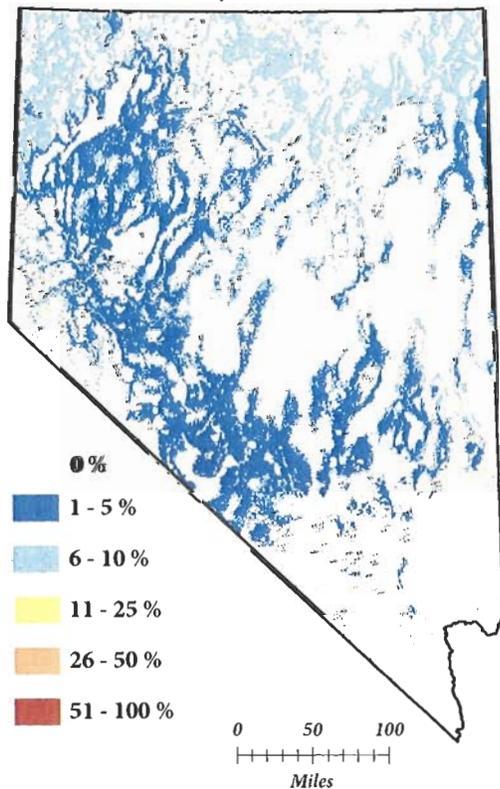
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Perennial Stream
-  River



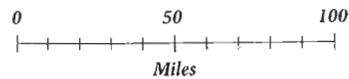
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	6	(43%)
Probable	3	(21%)
Confirmed	5	(36%)
TOTAL	14	

ABUNDANCE	NO.	
Uncommon	3	(21%)
Fairly Common	7	(50%)
Common	3	(21%)
Abundant	1	(7%)
TOTAL	14	



Survey Block Records

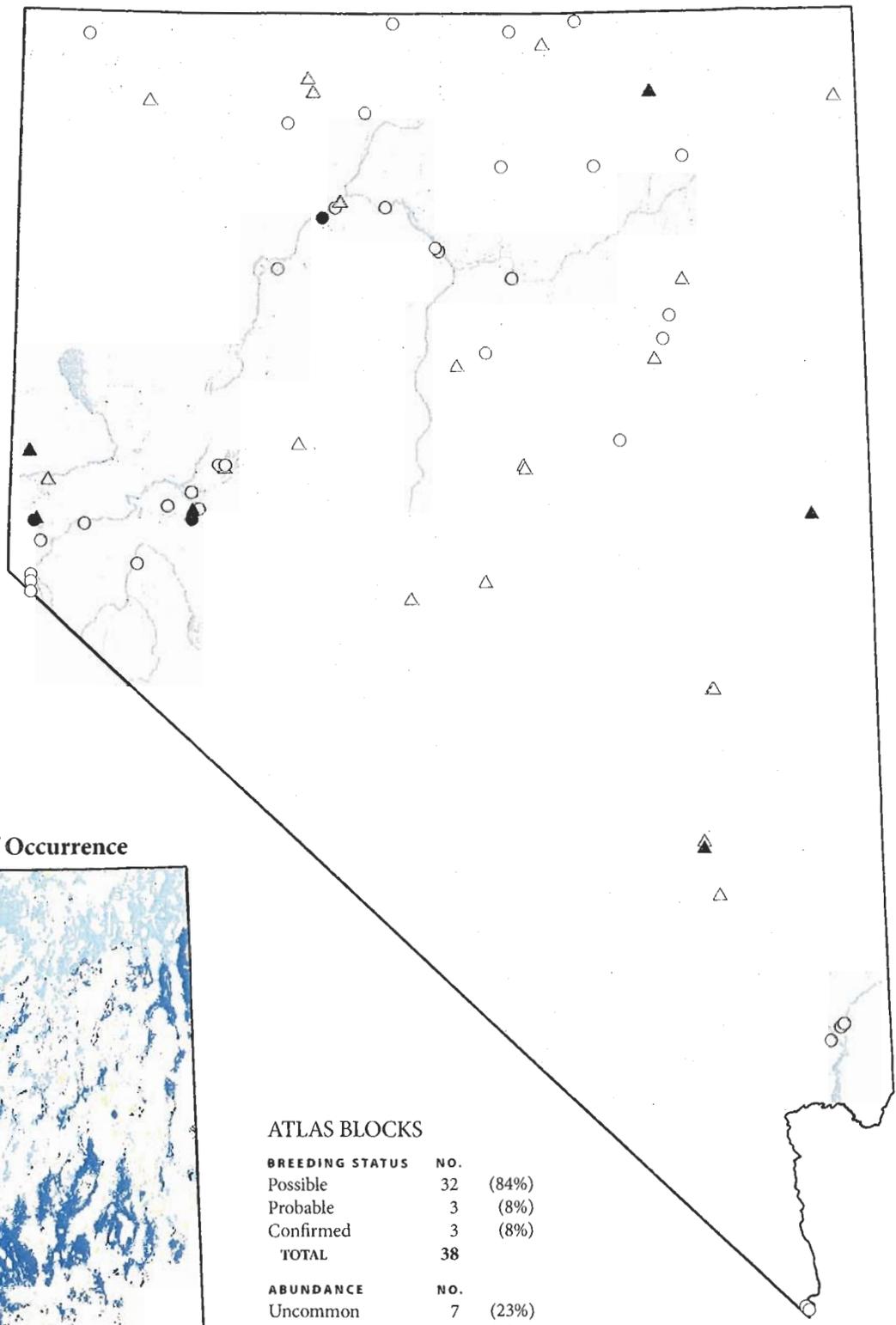
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- Probable
- Possible

Incidental Records

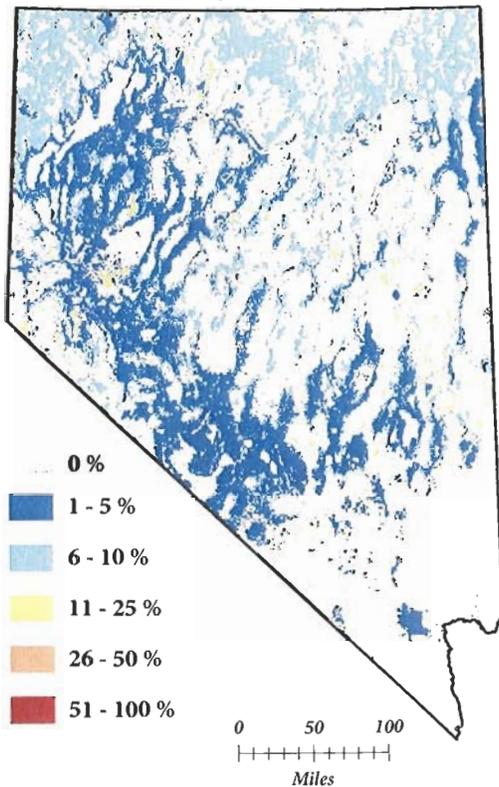
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
- Perennial Stream
- River



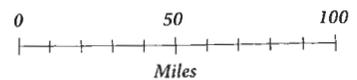
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	32	(84%)
Probable	3	(8%)
Confirmed	3	(8%)
TOTAL	38	

ABUNDANCE	NO.	
Uncommon	7	(23%)
Fairly Common	9	(29%)
Common	10	(32%)
Abundant	5	(16%)
TOTAL	31	



Survey Block Records

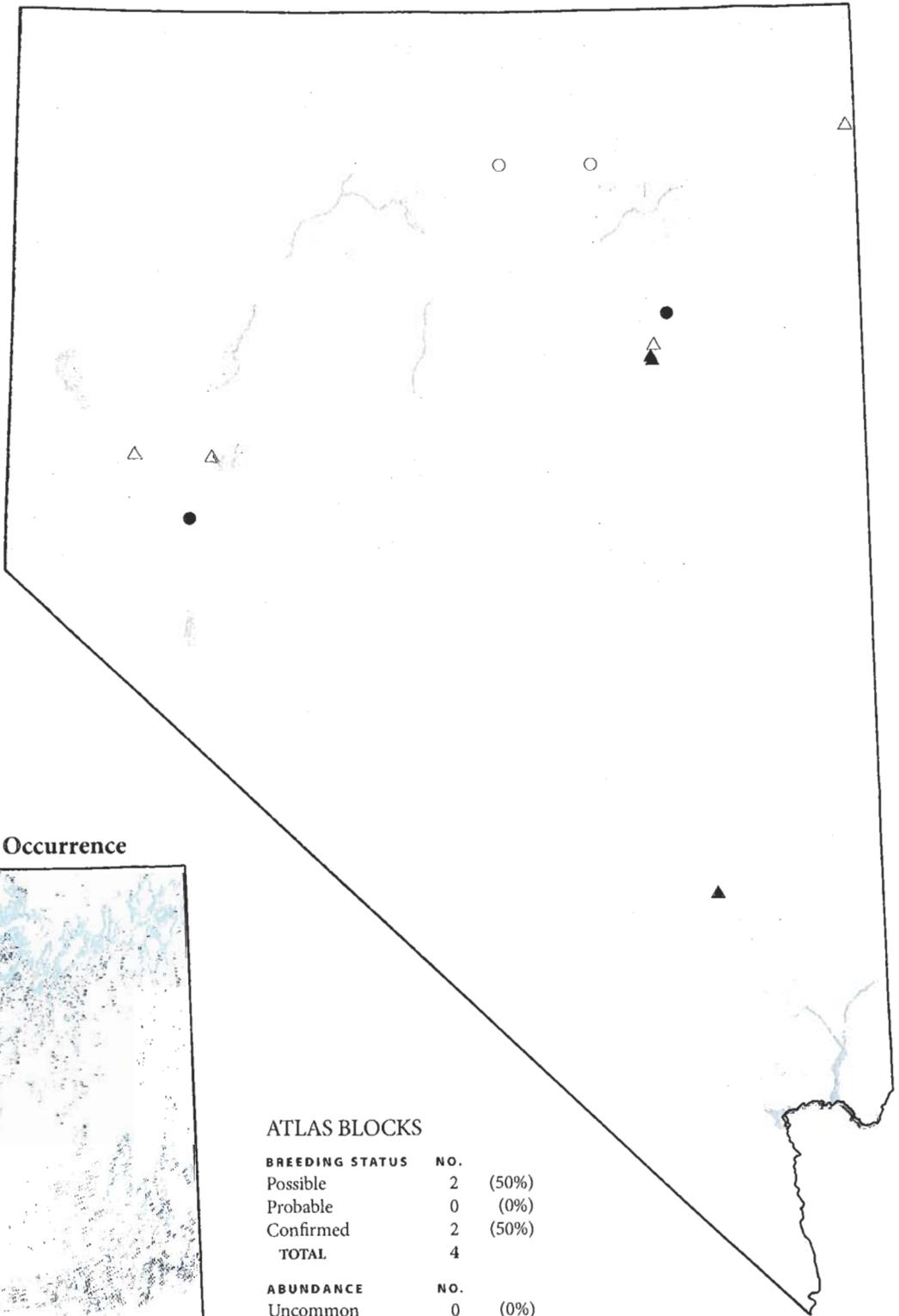
- Confirmed
- Probable
- Possible

Incidental Records

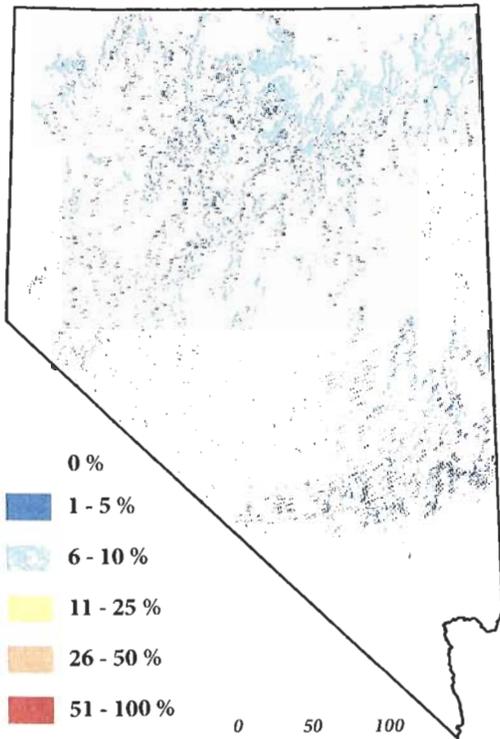
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

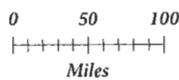
-  Dry/Intermittent Lake
-  Perennial Lake
-  Perennial Stream
-  River



Probability of Occurrence



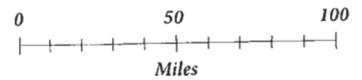
- 0 %
-  1 - 5 %
-  6 - 10 %
-  11 - 25 %
-  26 - 50 %
-  51 - 100 %



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	2	(50%)
Probable	0	(0%)
Confirmed	2	(50%)
TOTAL	4	

ABUNDANCE	NO.	
Uncommon	0	(0%)
Fairly Common	2	(50%)
Common	2	(50%)
Abundant	0	(0%)
TOTAL	4	



Survey Block Records

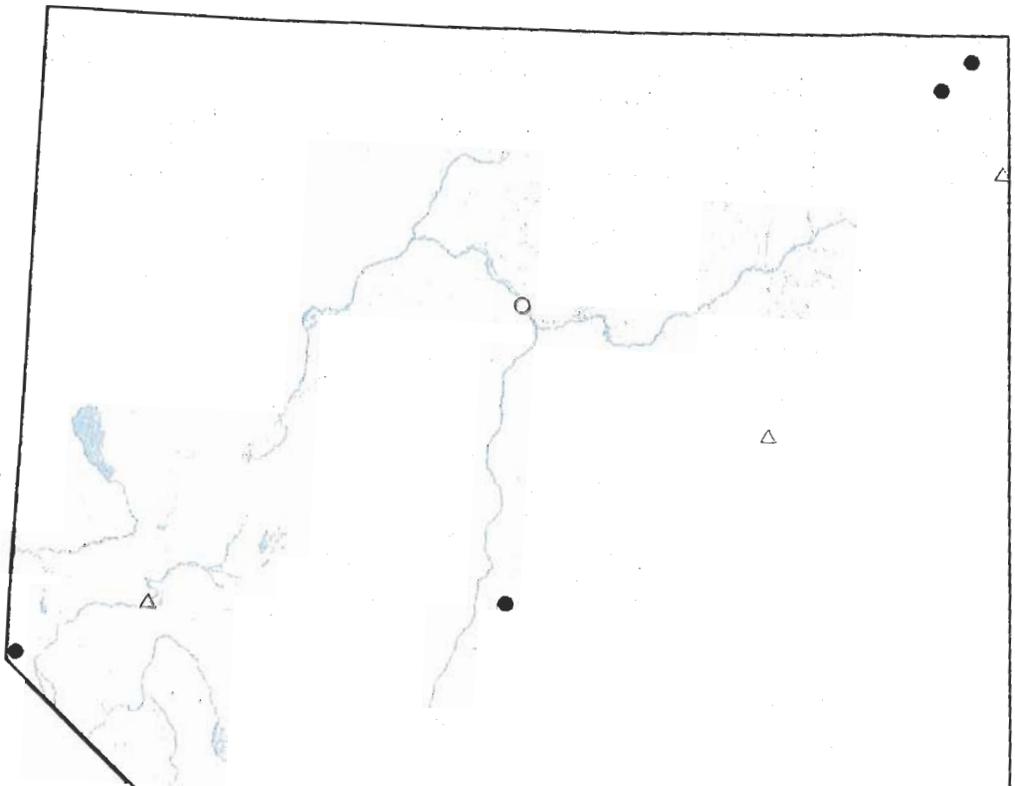
- Confirmed
- Probable
- Possible

Incidental Records

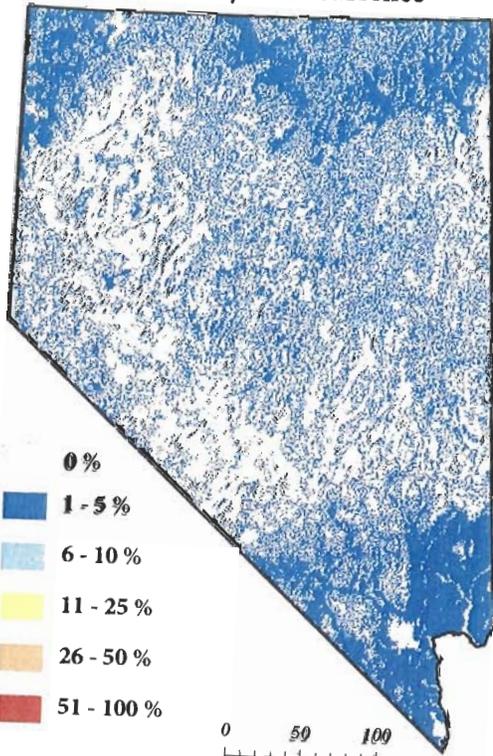
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Mojave
- Perennial Stream
- River



Probability of Occurrence

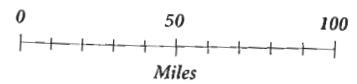


- 0 %
-  1 - 5 %
-  6 - 10 %
-  11 - 25 %
-  26 - 50 %
-  51 - 100 %

ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	7	(54%)
Probable	0	(0%)
Confirmed	6	(46%)
TOTAL	13	

ABUNDANCE	NO.	
Uncommon	5	(50%)
Fairly Common	4	(40%)
Common	1	(10%)
Abundant	0	(0%)
TOTAL	10	



Survey Block Records

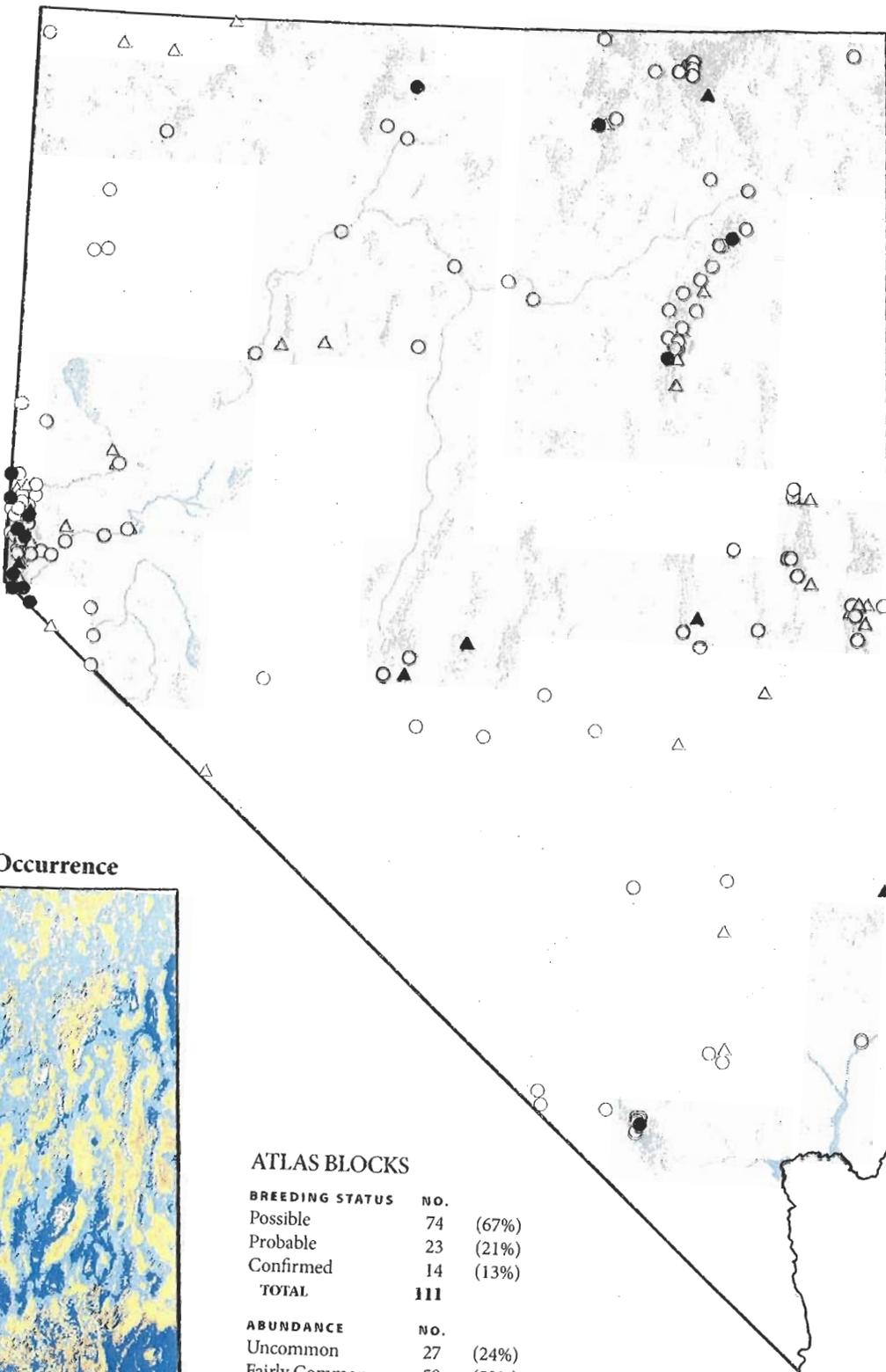
- Confirmed
- Probable
- Possible

Incidental Records

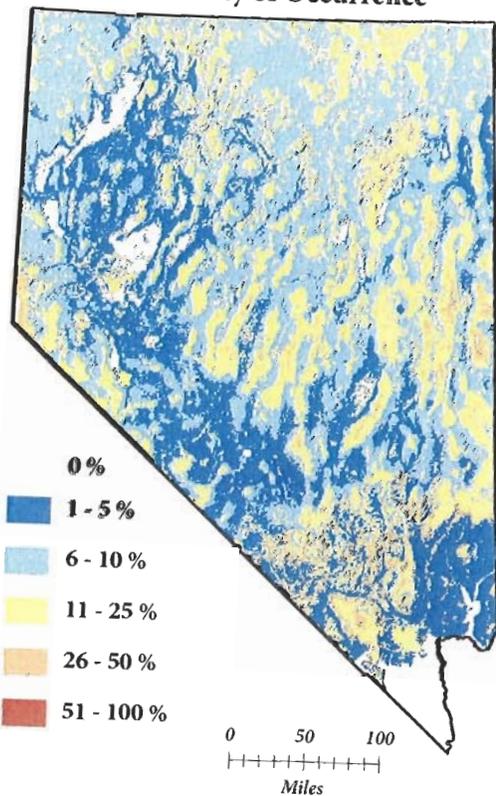
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

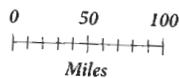
-  Dry/Intermittent Lake
-  Perennial Lake
-  Pinyon-Juniper
-  Montane
-  Perennial Stream
-  River



Probability of Occurrence



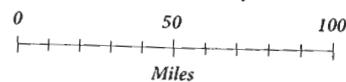
- 0%
- 1 - 5%
- 6 - 10%
- 11 - 25%
- 26 - 50%
- 51 - 100%



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	74	(67%)
Probable	23	(21%)
Confirmed	14	(13%)
TOTAL	111	

ABUNDANCE	NO.	
Uncommon	27	(24%)
Fairly Common	59	(53%)
Common	25	(23%)
Abundant	0	(0%)
TOTAL	111	



Survey Block Records

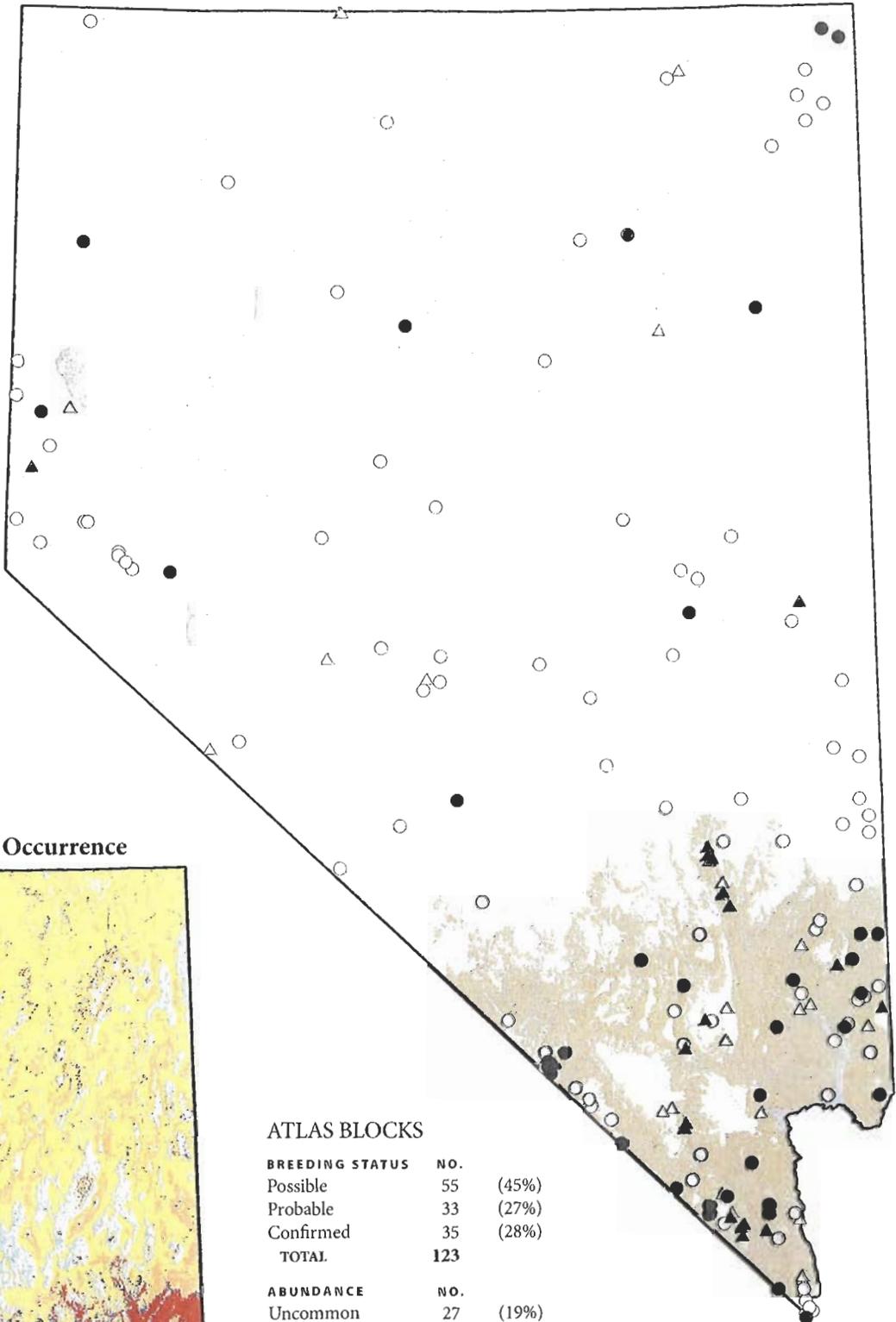
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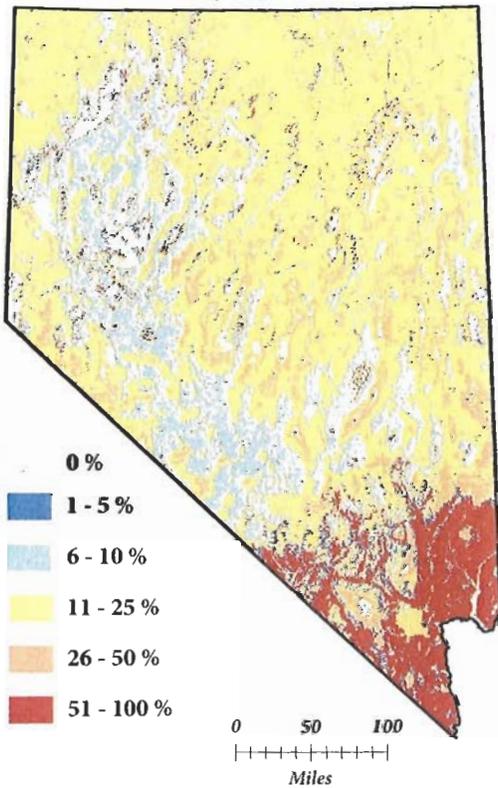
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Mojave
-  Perennial Stream
-  River



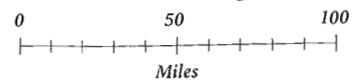
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	55	(45%)
Probable	33	(27%)
Confirmed	35	(28%)
TOTAL	123	

ABUNDANCE	NO.	
Uncommon	27	(19%)
Fairly Common	83	(60%)
Common	29	(21%)
Abundant	0	(0%)
TOTAL	139	



Survey Block Records

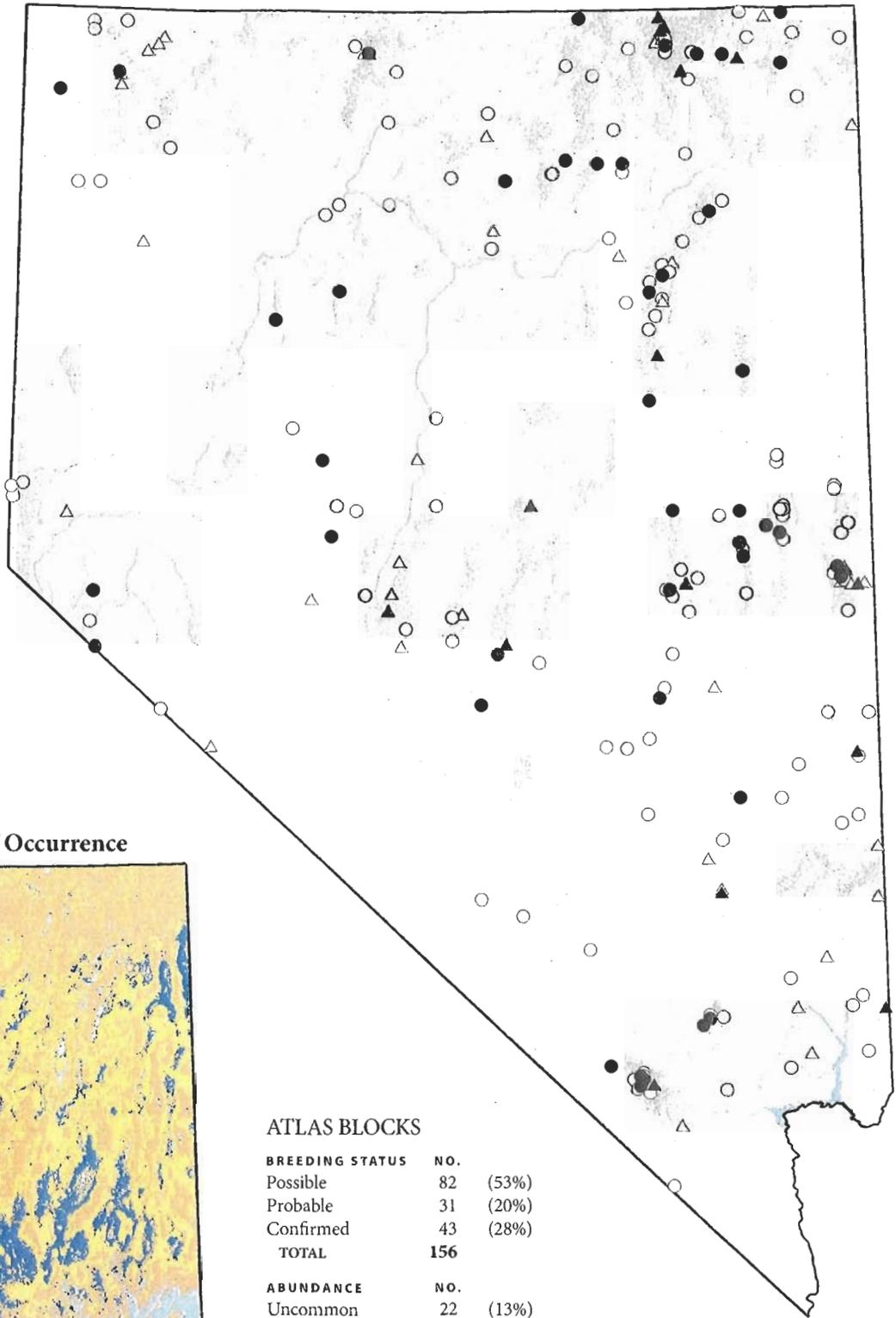
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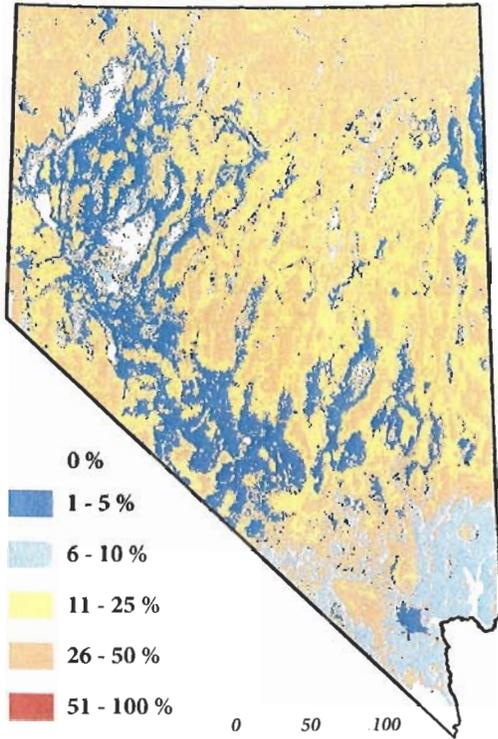
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

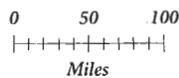
-  Dry/Intermittent Lake
-  Perennial Lake
-  Pinyon-Juniper
-  Montane
-  Perennial Stream
-  River



Probability of Occurrence



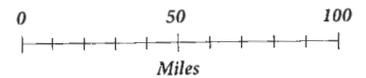
- 0 %
- 1 - 5 %
- 6 - 10 %
- 11 - 25 %
- 26 - 50 %
- 51 - 100 %



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	82	(53%)
Probable	31	(20%)
Confirmed	43	(28%)
TOTAL	156	

ABUNDANCE	NO.	
Uncommon	22	(13%)
Fairly Common	101	(62%)
Common	39	(24%)
Abundant	1	(< 1%)
TOTAL	163	



Survey Block Records

- Confirmed
- Probable
- Possible

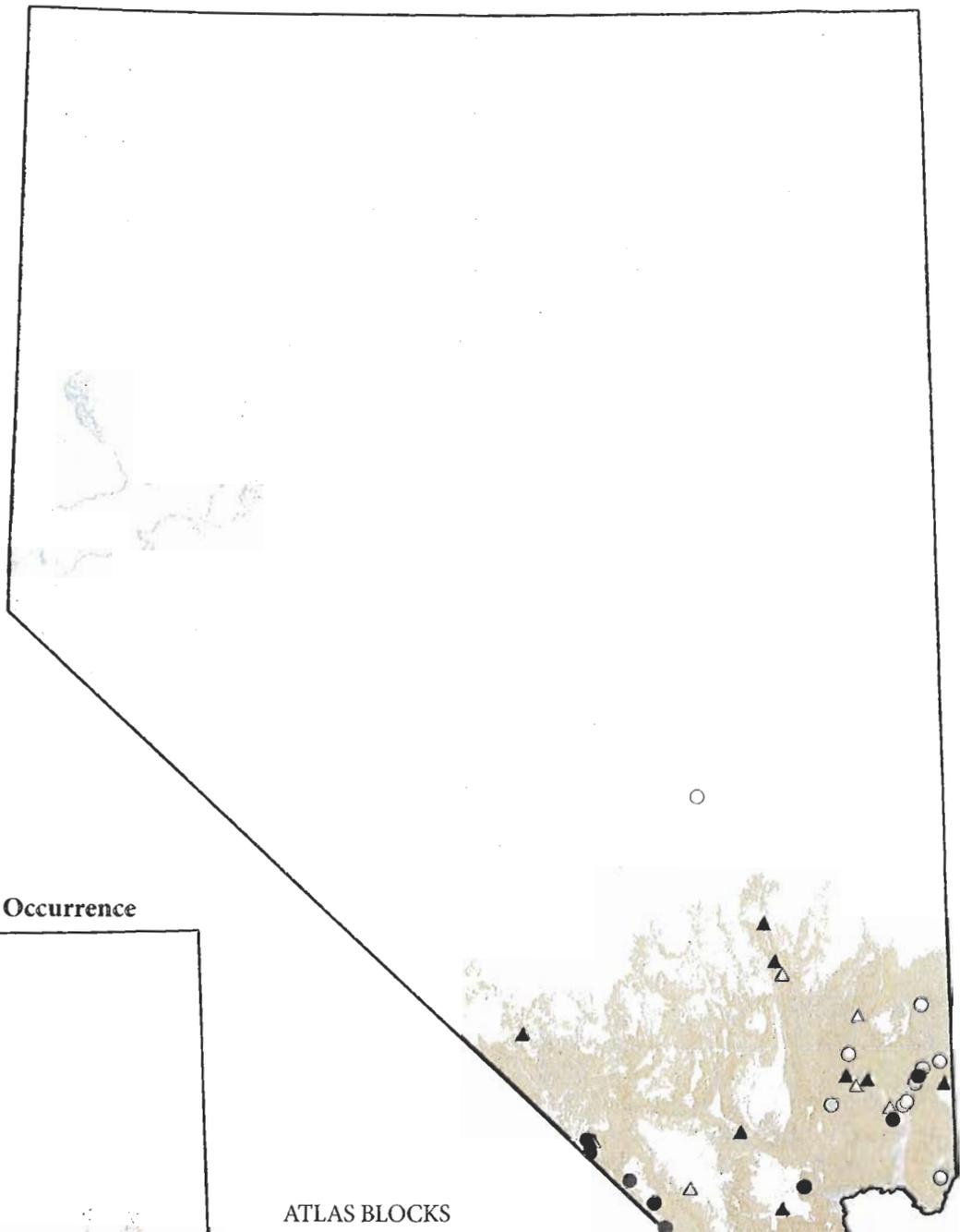
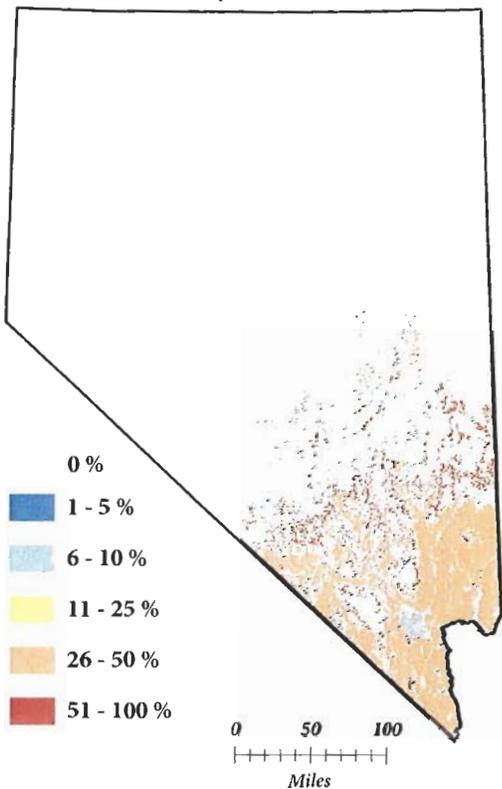
Incidental Records

- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Mojave
-  Perennial Stream
-  River

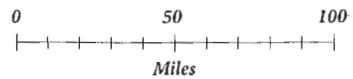
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	8	(27%)
Probable	8	(27%)
Confirmed	14	(47%)
TOTAL	30	

ABUNDANCE	NO.	
Uncommon	3	(8%)
Fairly Common	27	(69%)
Common	9	(23%)
Abundant	0	(0%)
TOTAL	39	



Survey Block Records

- Confirmed
- Probable
- Possible

Incidental Records

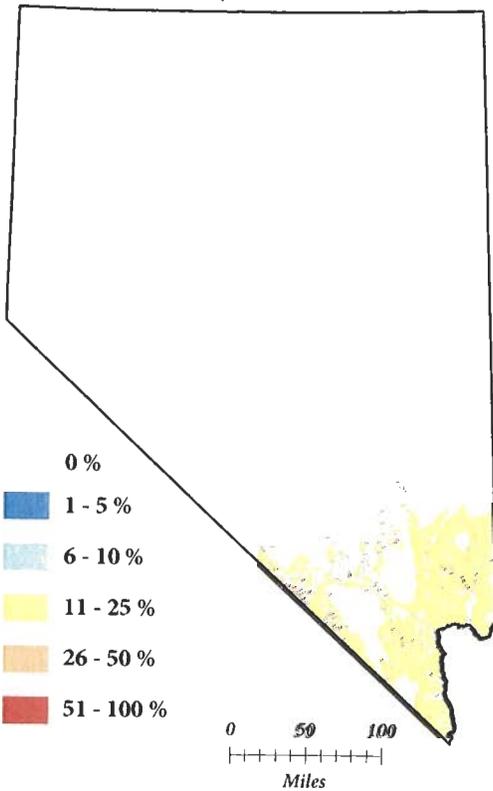
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Mojave
-  Perennial Stream
-  River



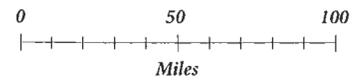
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	6	(21%)
Probable	6	(21%)
Confirmed	16	(57%)
TOTAL	28	

ABUNDANCE	NO.	
Uncommon	3	(8%)
Fairly Common	19	(51%)
Common	15	(41%)
Abundant	0	(0%)
TOTAL	37	



Survey Block Records

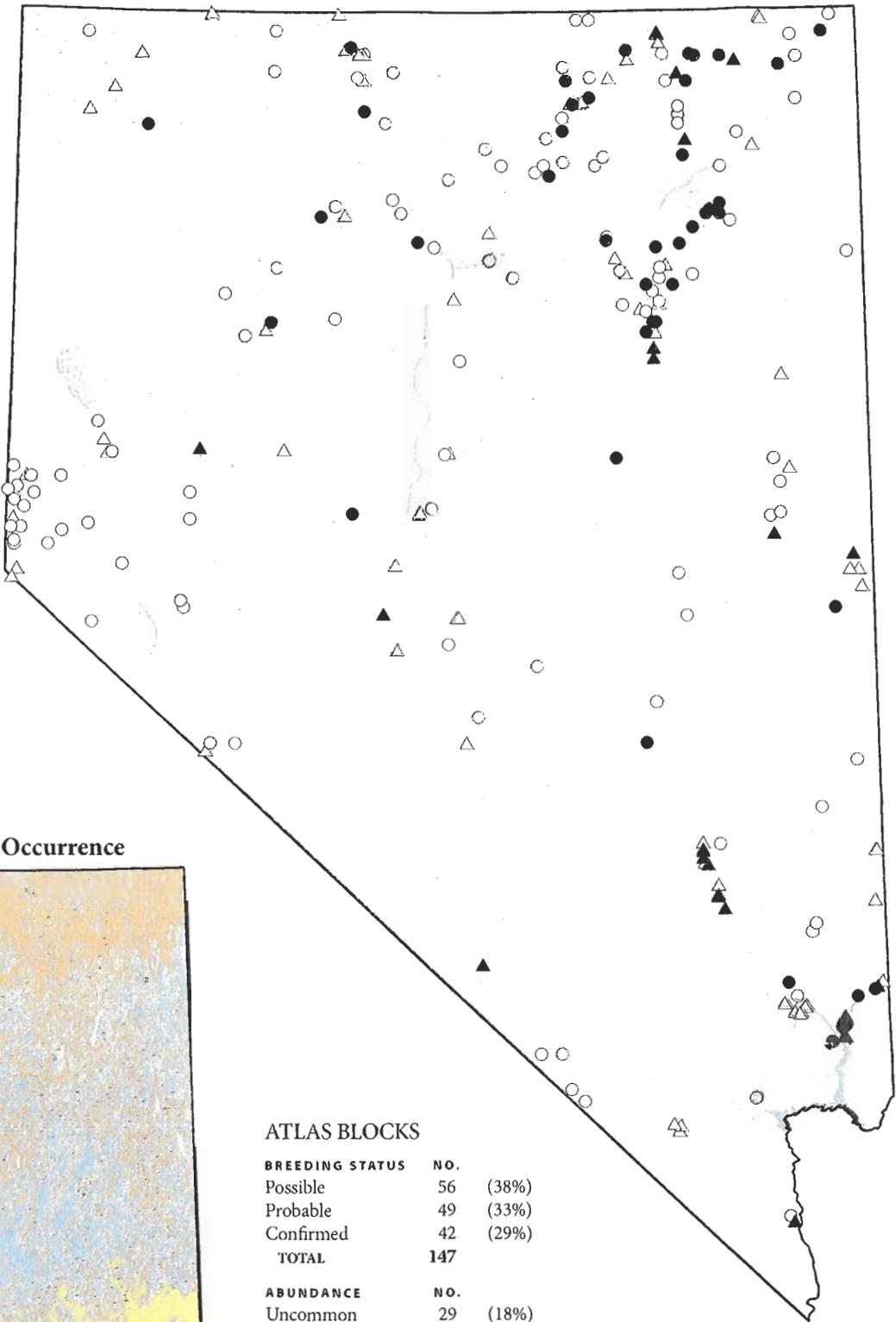
- Confirmed
- Probable
- Possible

Incidental Records

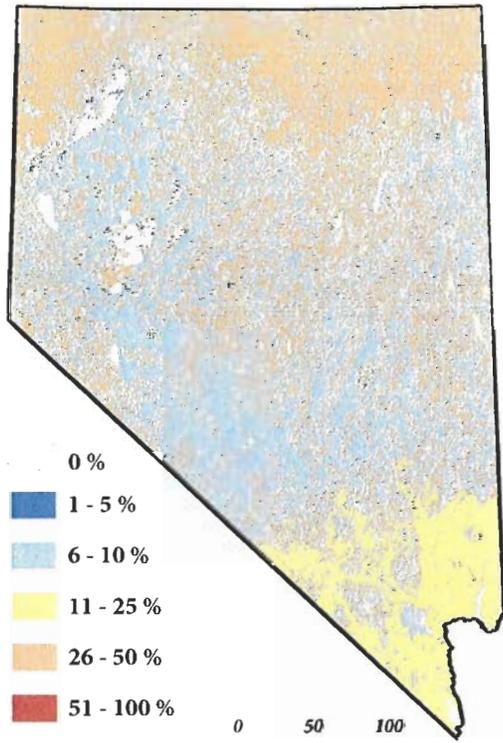
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

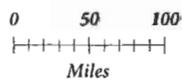
-  Dry/Intermittent Lake
- Perennial Lake
- Perennial Stream
- River



Probability of Occurrence



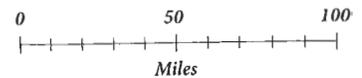
- 0 %
- 1 - 5 %
- 6 - 10 %
- 11 - 25 %
- 26 - 50 %
- 51 - 100 %



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	56	(38%)
Probable	49	(33%)
Confirmed	42	(29%)
TOTAL	147	

ABUNDANCE	NO.	
Uncommon	29	(18%)
Fairly Common	86	(53%)
Common	44	(27%)
Abundant	3	(2%)
TOTAL	162	



Survey Block Records

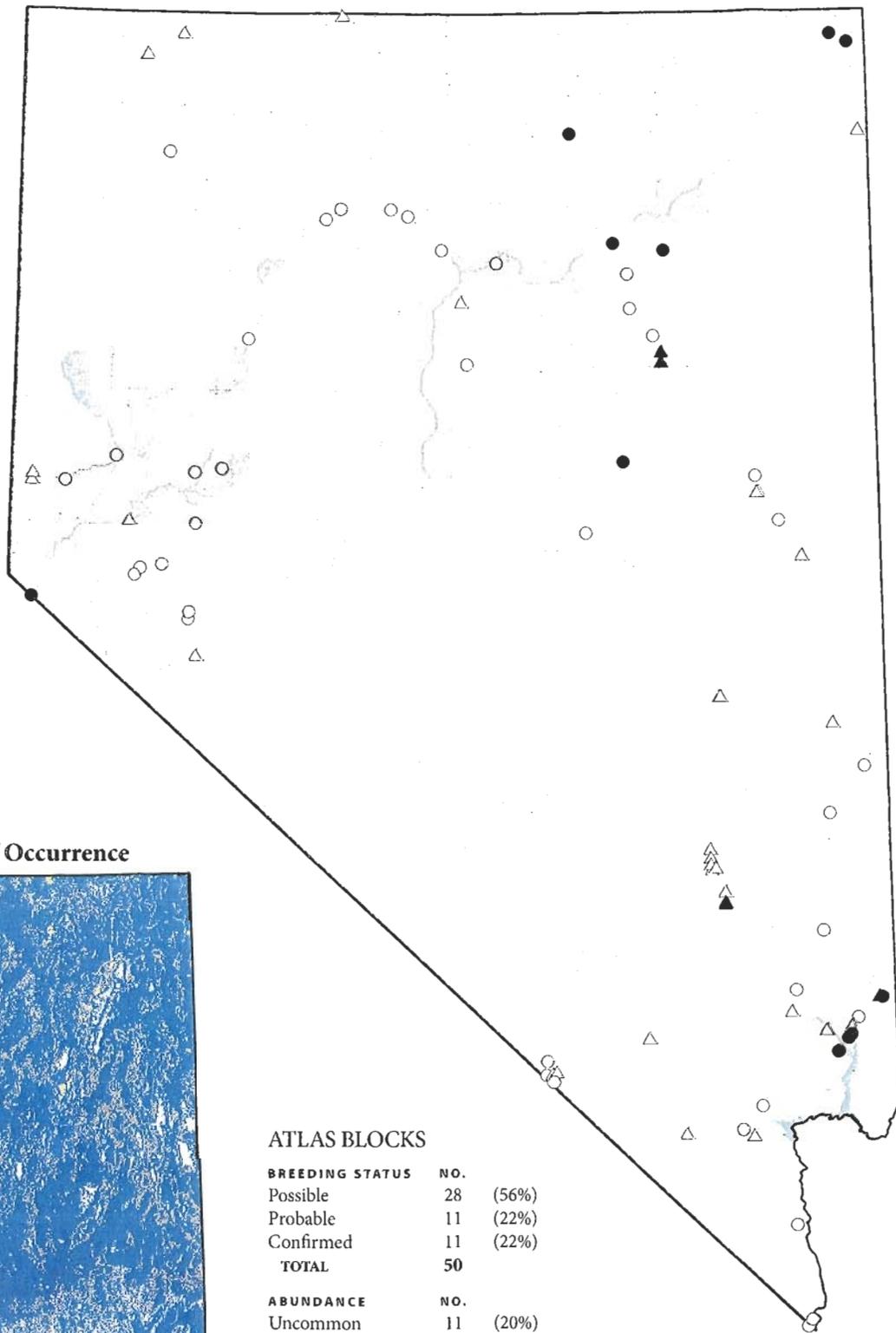
- Confirmed
- Probable
- Possible

Incidental Records

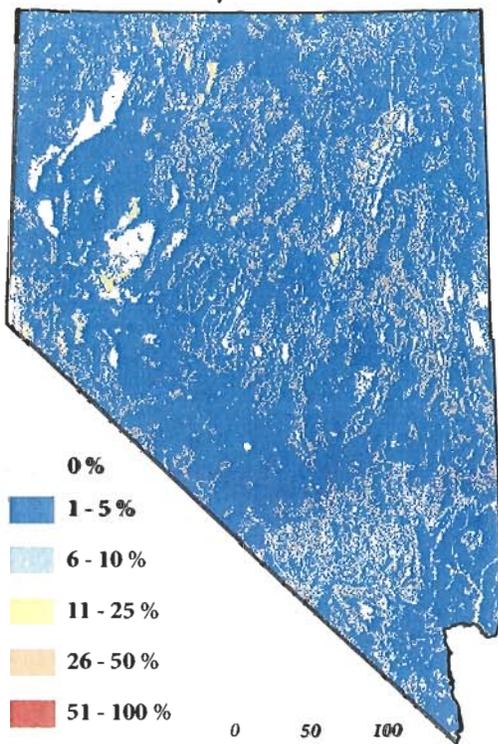
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Perennial Stream
-  River



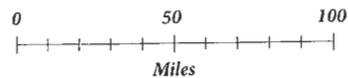
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	28	(56%)
Probable	11	(22%)
Confirmed	11	(22%)
TOTAL	50	

ABUNDANCE	NO.	
Uncommon	11	(20%)
Fairly Common	32	(58%)
Common	12	(22%)
Abundant	0	(0%)
TOTAL	55	



Survey Block Records

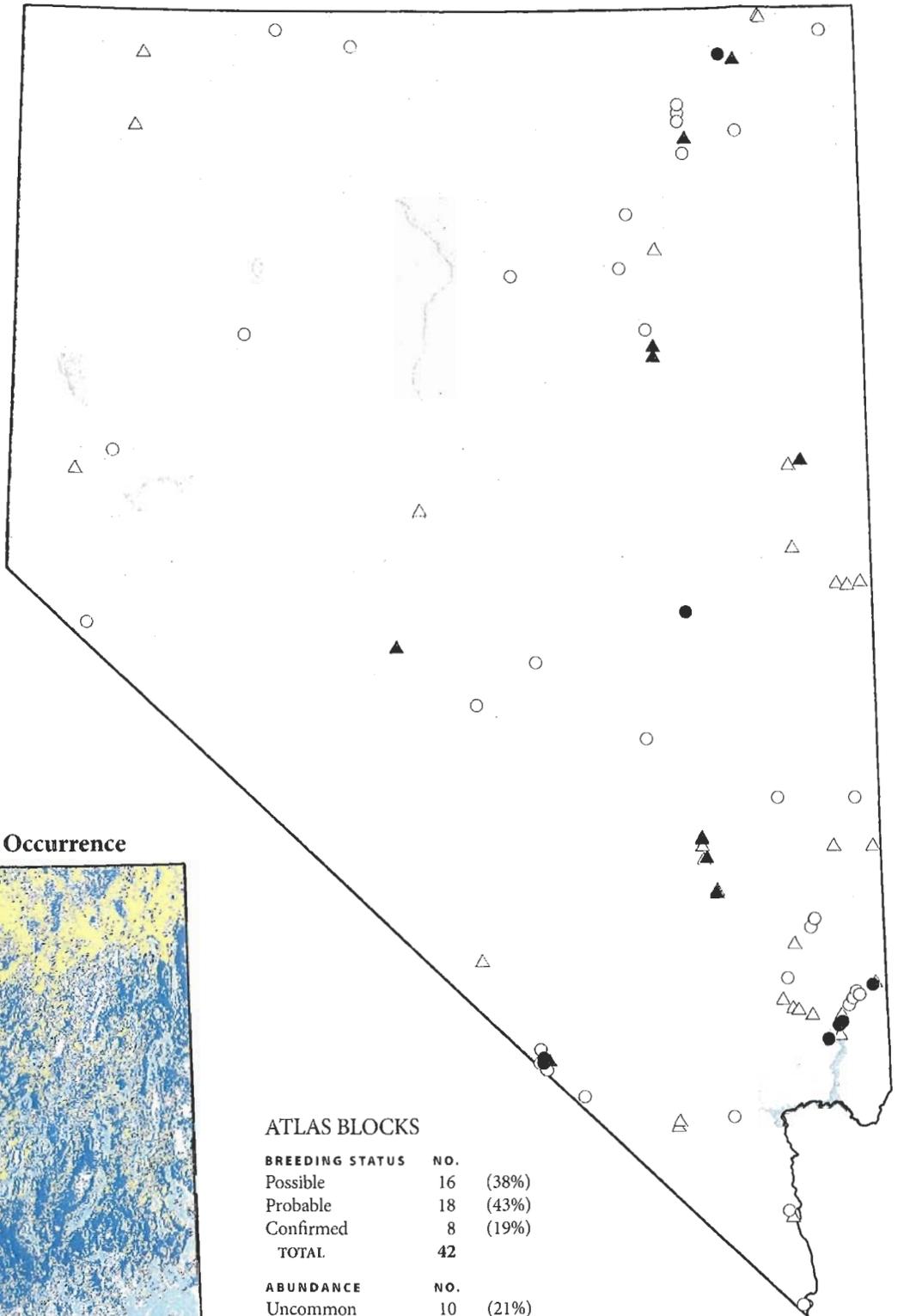
- Confirmed
- Probable
- Possible

Incidental Records

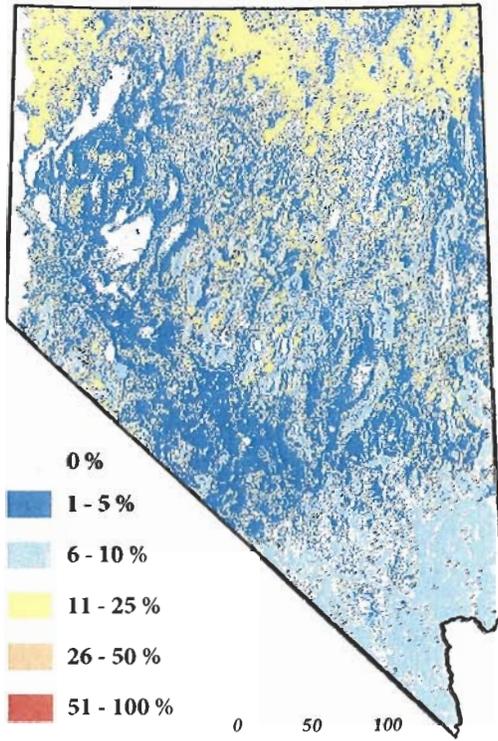
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Perennial Stream
-  River



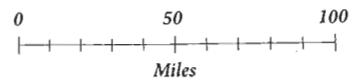
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	16	(38%)
Probable	18	(43%)
Confirmed	8	(19%)
TOTAL	42	

ABUNDANCE	NO.	
Uncommon	10	(21%)
Fairly Common	26	(54%)
Common	12	(25%)
Abundant	0	(0%)
TOTAL	48	



Survey Block Records

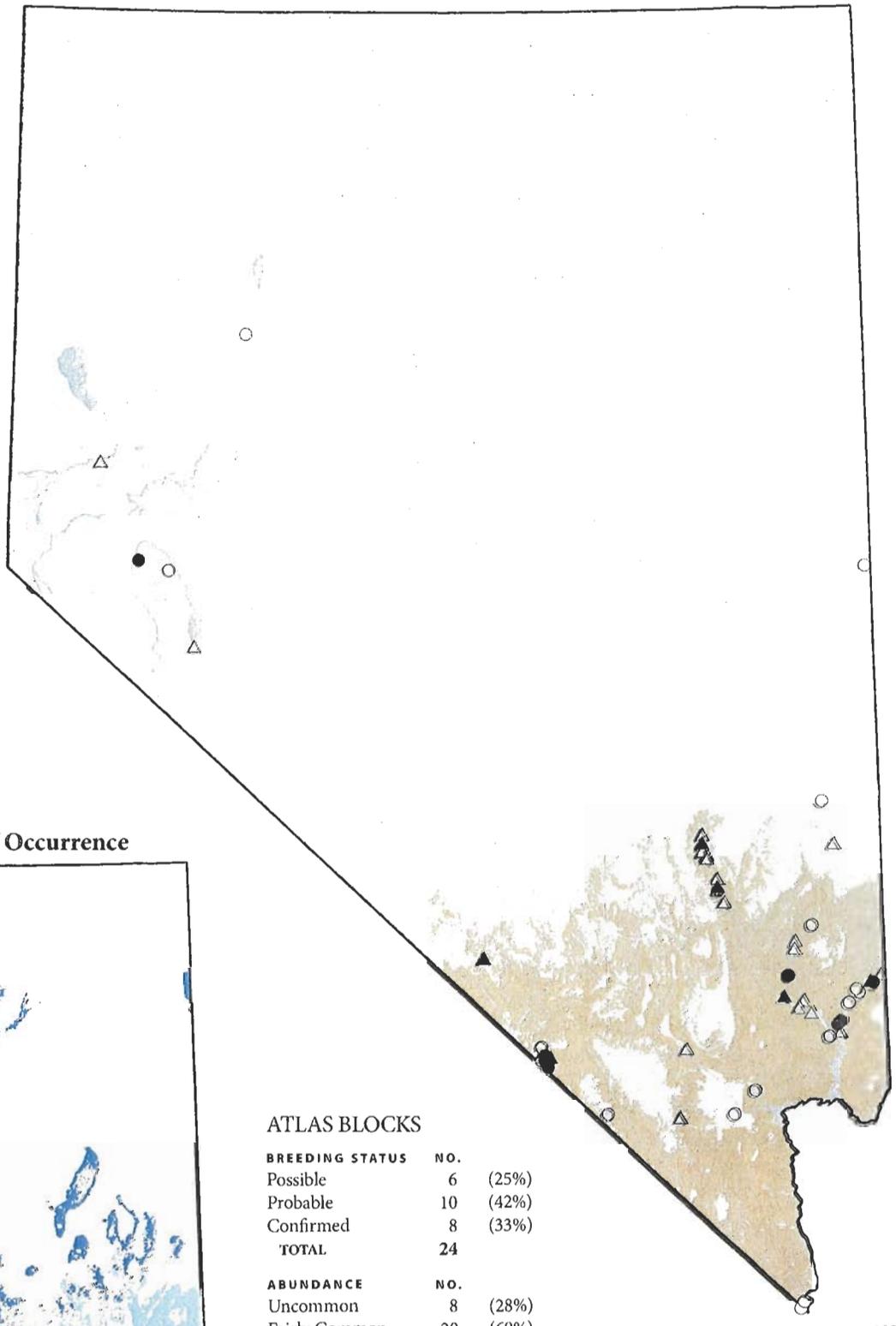
- Confirmed
- Probable
- Possible

Incidental Records

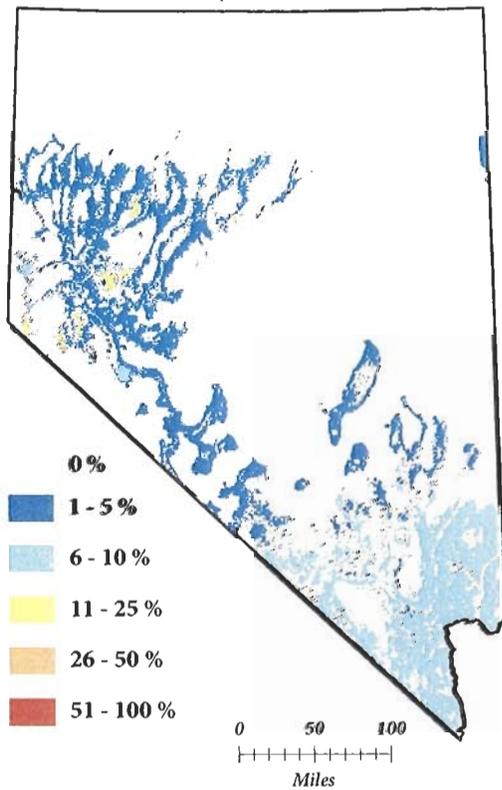
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

-  Dry/Intermittent Lake
-  Perennial Lake
-  Mojave
-  Perennial Stream
-  River



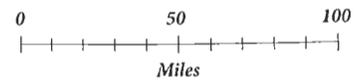
Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	6	(25%)
Probable	10	(42%)
Confirmed	8	(33%)
TOTAL	24	

ABUNDANCE	NO.	
Uncommon	8	(28%)
Fairly Common	20	(69%)
Common	1	(3%)
Abundant	0	(0%)
TOTAL	29	



Survey Block Records

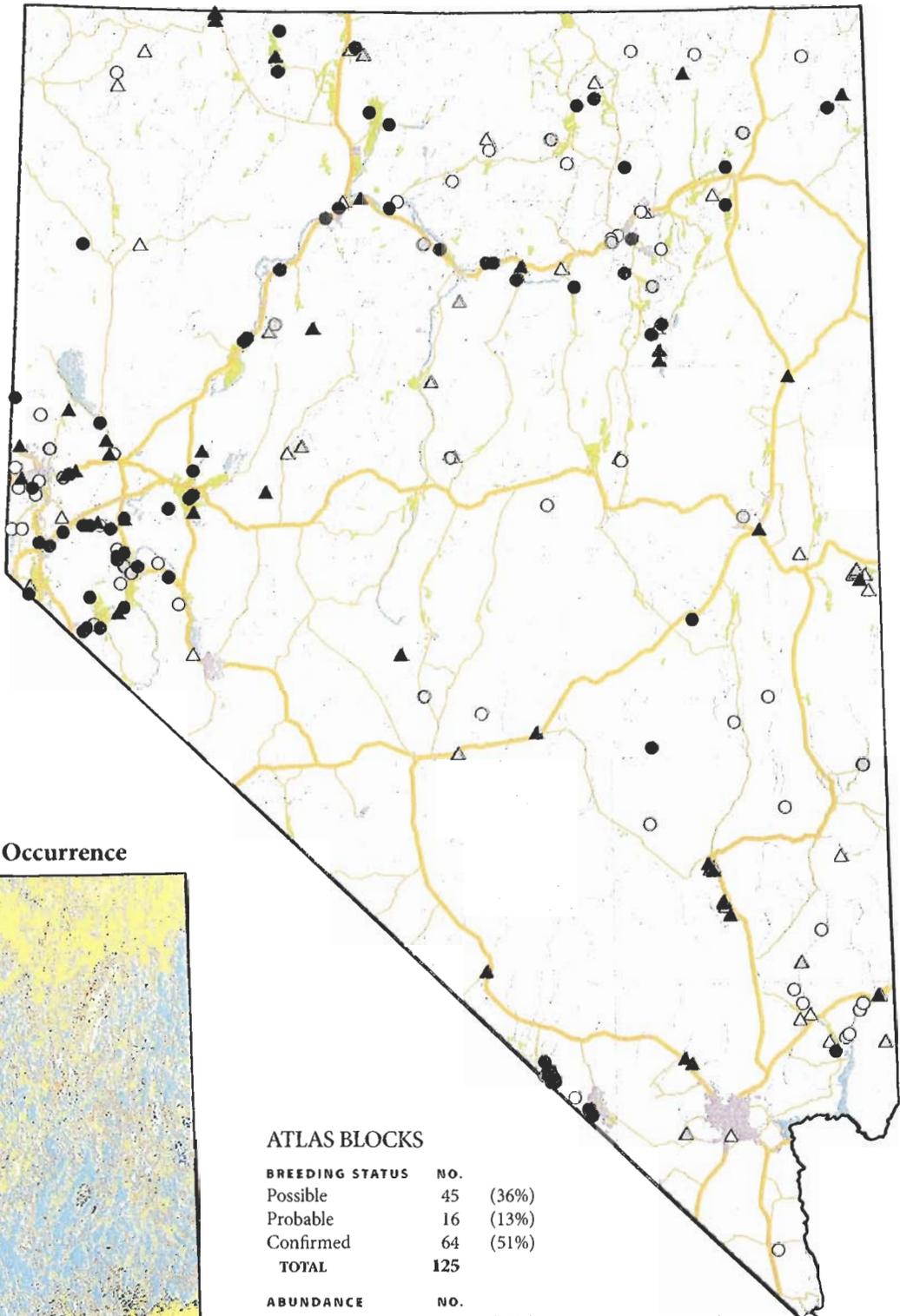
- Confirmed
- Probable
- Possible

Incidental Records

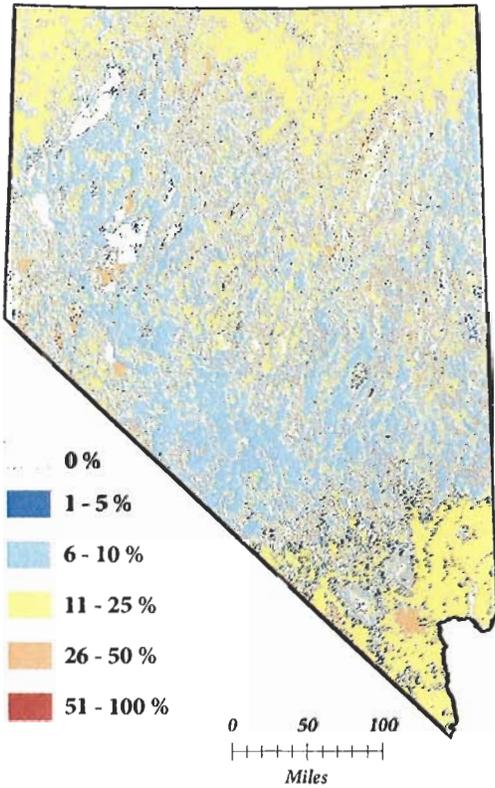
- ▲ Confirmed
- △ Probable
- △ Possible

Habitat

- Dry/Intermittent Lake
- Perennial Lake
- Urban
- Agriculture
- Stream
- River
- State Highway/Road
- Federal Highway



Probability of Occurrence



ATLAS BLOCKS

BREEDING STATUS	NO.	
Possible	45	(36%)
Probable	16	(13%)
Confirmed	64	(51%)
TOTAL	125	

ABUNDANCE	NO.	
Uncommon	39	(29%)
Fairly Common	82	(60%)
Common	14	(10%)
Abundant	1	(< 1%)
TOTAL	136	

